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ABSTRACT

This volume, second in a series of five, focuses on methods to evaluate sex education programs. It is presented in five chapters. Chapter One critically reviews previously used methods of evaluating programs and makes suggestions for improving those evaluations. Problems of experimental designs which incorporate an experimental/control group and student surveys include control of error, failure to measure potentially important consequences, selective publication of successful results, nonrandomness of courses selected for evaluation, and poor instrumentation. Chapter Two discusses advantages and disadvantages of major types of methodological designs for school programs and recommends designs for particular goals. Chapter Three discusses different methods of obtaining new information about important features and outcomes of sex education programs. Chapter Four presents results of a survey in which experts rated topics of importance in a sex education program. Chapter Five provides and discusses six questionnaires for measuring features and outcomes of programs identified in Chapter Four.
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AN ANALYSIS
OF U.S. SEX EDUCATION PROGRAMS
AND EVALUATION METHODS

Volume II

for the:

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Center for Disease Control
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PREFACE

Whereas Volume I describes different sex education programs and discusses the evidence for their effectiveness, this volume focuses upon the methods used to obtain that evidence. Thus, this volume is methodological, not substantive.

Chapter 1 critically reviews previously used methods of evaluating programs and makes specific suggestions for improving those evaluations. Chapter 2 is more theoretical and discusses the advantages and disadvantages of major types of methodological designs. It also recommends particular designs for particular goals. Chapter 3 then evaluates different procedures for collecting new information on features and outcomes. It concludes that written questionnaires are the single best method. Chapter 4 identifies the specific features and outcomes that should be measured. That is, it establishes the major variables of importance. Finally, in Chapter 5 are greatly improved questionnaires that may reliably and validly measure the important features and outcomes of programs.

In sum, this volume discusses methods that have been used and methods that can be used in the foreseeable future. It also discusses the major issues of overall design as well as specific methods of collecting data. Significantly, the questionnaires provided can be used effectively in most methodological designs.

CHAPTER 1:
A REVIEW OF METHODS USED IN EXISTING STUDIES
AND
SUGGESTIONS FOR IMPROVEMENT

Introduction

This chapter is somewhat critical of the methods used in evaluating sex education programs and it raises some doubts about the validity of previously published findings. However, this criticism is mitigated by three factors.

First, some of the studies which have provided evidence for the success of sex education programs were in fact designed for other purposes. Thus, it is unfair to judge the overall quality of these studies according to how well they evaluated programs.

Second, most previous evaluators of sex education programs have tackled a difficult task with very limited resources. On the one hand, they have tried to assess a multitude of possible outcomes that are subtle, inter-related, long term, highly personal, and controversial. On the other hand, they have had at their disposal only limited funding, limited administrative support, and limited methodological sophistication. Despite the difficulty of these tasks and despite these limitations, evaluators have produced a valuable body of evidence.

Third, the field is changing rapidly: different organizations are providing both administrative support and funds for evaluations; skilled methodologists are now conducting studies; and the quality of the evidence is rapidly rising.

Several examples illustrate the rapid change. At the University of Texas, Galveston, Parcel and Luttman are designing questionnaires with several useful and reliable scales, and giving them to students in a pre and posttest design. At Humboldt State University, California, Crosbie is also developing a questionnaire with contraceptive decision-making scales. It has been pretested on hundreds of students. In Santa Cruz County, the Planned Parenthood affiliate is developing improved questionnaires and an experimental design in their evaluation of many school programs. In New York, Carrera is completing an excellent evaluation of a sex education program in a special school for teenage males. In Falls Church, Virginia, Philliber and Gutterman of Columbia University are carefully comparing students who have taken a complete course in sex education with students who have not taken such a course. In Florida, Meisner is gathering abortion data from questionnaires completed by all patients at abortion clinics and is thereby estimating the abortion rates for different high schools. In northern California, the

Humboldt-Del Norte Public Health Department Family Planning Program is using the same methods to estimate pregnancy rates of high schools from questionnaires completed at pregnancy testing clinics.

All of these examples represent greatly improved methods of evaluation. However, these studies are in progress and are not yet published. Thus, the following review of previously used methods is not based upon these studies.

Methods Used to Evaluate Programs: Experimental Designs

By far the most common method of analyzing the effects of sex education programs utilizes an experimental design in which the sex education class is considered the experimental group and some other class or group of students is considered the control group. Appropriately, the "treatment" consists of all the activities of the sex education class. Typically, pretests are administered during the first few days of class and posttests are given during the last few days of class. Of the numerous studies examined for this review, more than 90% employed such a design.

These evaluations provide substantial evidence for the validity of both the design and the conclusions of these experimental studies. The programs evaluated operate in many parts of the country in very different types of communities. They are taught by different types of teachers. They include different course structures (e.g., ordinary class periods, five consecutive eight hour days, rap sessions, and lectures). Moreover, they have been evaluated by different types of researchers (e.g., high school teachers, college professors, Ph.D. students, and social scientists). Despite this diversity, there is remarkable consistency among their findings. This convergence suggests that both the conclusions and the methods are valid.

Strengths of the Experimental Studies

The experimental design is very popular and produces valid evidence because the experimental design both in general, and in these particular applications has several important strengths and advantages.

Control of Error Through Pre and Posttests and Experimental and Control Groups

Some of these studies had both experimental and control groups and collected data both at the beginning and the end of the course. In combination, these two features substantially reduced particular types of error. Specifically, they reduced or eliminated the error caused by changes in the students which would have occurred anyway. There are two important classes of changes that may have occurred. First are normal maturation processes. As students pass through high school, they typically become more knowledgeable, more sexually active, etc., regardless of whether they take a sex education class. Second are specific and less common historical events. For example, if a popular high school girl becomes pregnant and is forced to drop out of school, this may affect the behavior of some students. Alternatively, and more dramatically, if this same high school girl dies of an abortion, this may have a greater impact upon others' behavior. By comparing the changes over time of both the experimental and control groups, these

studies substantially controlled the effects of these influences.

Analyzing the pre and posttest scores of experimental and control subjects partly eliminated the effects that the pretests might have had upon subsequent behavior and upon posttests. For example, if bright students are unable to answer some questions on a knowledge test on human sexuality, they may be especially likely to seek answers to those questions regardless of whether or not they are taking a sex education course. Or, if they are questioned about their use of effective contraception, they may become more aware that they're using contraception ineffectively, and then try to improve their use. Fortunately, these factors were partly controlled by comparing the changes in the experimental and control groups.

Natural Structure for Experimental Designs

The experimental design was naturally applied to the class structure, and thereby overcame a great potential defect of experiments, namely, their artificiality. In many laboratory experiments designed to test psychological principles, the laboratory environment is so different from "reality" that the laboratory appears artificial and thus the findings cannot be credibly generalized to reality. When experimental designs were used to evaluate sex education programs, this problem disappeared because the setting is not artificial and there is no difference between the experimental setting and reality.

Correct Statistical Analysis

In general, the raw data from experimental designs were statistically analyzed with widely accepted statistical procedures. Most evaluators correctly calculated the means of the different variables for the different groups, compared them, and calculated their statistical significance. Although a few suggestions for improving these statistical methods are discussed below, these methods actually used are statistically correct and statistically powerful.

Weaknesses and Omissions of the Experimental Studies

One important goal of evaluations of sex education programs is to provide valid conclusions about all potentially important consequences of sex education courses and programs. Clearly, that goal has not been reached. One reason is that existing studies have ignored some potentially important phenomena. These omissions do not call into question the conclusions that have been reached, but they do define the limitations of these conclusions. These omissions are discussed first. Following that discussion is an analysis of those methodological problems that do jeopardize the validity of the existing conclusions both 1) as a collective whole, and 2) as separate individual studies.

Failure to Analyze Long-Term Effects

Perhaps the single greatest methodological deficiency of these studies is their failure to examine the long term effects of sex education programs. The vast majority of the studies observed pre and posttest data that were

collected at the very beginning and very end of the course or unit of instruction. Only a handful of studies measured the effects as long as three or six months later. Two of these indicated that the differences in knowledge and attitudes between the experimental and control groups diminished appreciably, but remained statistically significant. The third study showed that the difference between control and experimental groups increased as time passed. However, the strange patterns of the numbers of this third study rendered them somewhat suspect.

In general, the effects of a sex education program, like the effects of any program, may decline over time. If this decline occurs, then the question is, "How quickly do they decline?" This question certainly has not been answered by the literature.

It is possible, however, that some important consequences of a sex education class may not occur until well after the class is over and that the posttest administered at the end of the class does not capture them. For example, an important possible effect is the impact upon contraceptive use. If adolescents receive sex education instruction when they are young, they may not need contraception when they are taking the class, but months or years later they may use contraception more effectively because of the class. Obviously, this important result will be missed, if long term effects are not measured. This raises the question, "How long must the evaluator wait until the program effects become fully realized and apparent?"

Failure to Measure Potentially Important Consequences

Most of the studies observed the impact of sex education programs upon knowledge. A few of them examined the effects upon a few attitudes, such as tolerance of others' behavior, and attitudes towards one's own behavior. Only a handful measured the effects upon behavior itself. Thus, many important areas have been ignored. For example, none of the studies has examined the effects of sex education upon self esteem, the clarity of one's values, decision-making, communication and assertiveness skills, and fears of various forms of social and sexual interaction, even though these topics are covered in some classes. Moreover, only a few studies examined the effects upon important types of behavior, such as interaction with peers, dating, necking, sexual intercourse, and contraceptive use. Because these attitudes, skills, and behavior are undoubtedly more important than simple knowledge, this is a particularly important omission.

Failure to Evaluate the Impact Upon the Adolescent "Pool of Knowledge"

To an unknown extent, participants in sex education classes share the knowledge and attitudes they learn in class with their peers, younger siblings, and others. In so doing, they add to and improve the pool of knowledge that seems to flow from one generation of adolescents to the next. Today's adolescents are dreadfully ignorant about contraception and other sexual matters. Nevertheless, they are much more knowledgeable than adolescents ten or fifteen years ago. Thus, during those elapsed years, the pool of knowledge has increased and has improved, but the experimental studies have not provided significant evidence for the extent to which sex education programs have contributed to that improvement. That is, studies of sex

education programs have provided evidence for the impact of sex education programs upon the knowledge of the participants, but these studies have not assessed the impact of the increase in participants' knowledge upon nonparticipants' knowledge.

Failure to Evaluate Programs Integrated into Different Courses

All of the evaluations employing an experimental design attempted to measure the effects of single units of instruction or specific classes. None of them attempted to measure the effects of sex education programs in which material is presented to students in different grades and in different courses. Two facts suggest that this is an important omission. First, about half of the state guidelines suggest or require that sex education materials be integrated into several grade levels. Second, of all program characteristics rated by sex education experts, vertical integration of materials into numerous grade levels received the highest rating.

Whereas the omissions just described limit conclusions to a few short term effects of sex education classes, the problems described below call into question the validity of even those few findings.

Selective Publication of Successful Results

In the U.S. thousands of teachers offer classes or units on sex education, and hundreds (perhaps thousands) evaluate those classes with varying degrees of rigor. If a teacher finds that students improved on some dimension, then the natural inclination is to disseminate those results and to publish them if possible. On the other hand, if the results indicate that the course produced no significant change, then that teacher is not likely to share those results with colleagues and is especially unlikely to try to publish them. After all, few people like to broadcast their failure to others. Even if a teacher does try to publish those negative results, publishers are less likely to accept that article for publication. Thus, the reported successes in the literature may represent the anomalies, rather than the common occurrence.

Certainty of Statistically Significant Results

This next problem is closely linked with the problem just discussed. Most researchers demonstrate success by showing that the changes in students are statistically significant (typically at the .05 or .01 level). Such statistics are appropriate, but when numerous evaluations are conducted, these statistics should be questioned. If 1,000 evaluations are conducted, then by chance alone and by definition, results on a particular dimension will be statistically significant at the .05 level in 50 of them and significant at the .01 level in 10 of them. These numbers are particularly intriguing, because each year 1,000 teachers may attempt some type of evaluation of their sex education units or courses, but each year fewer than 50 may report statistically significant results in the literature.

Although important, this problem should not be exaggerated for two reasons. First, many studies show the same results. If the majority of the results were caused by chance, then these results from different studies would

not be so consistent. Instead, they would commonly show strange and inconsistent patterns. Second, many studies show a variety of statistically significant results which are consistent. The probability that all of these consistent results in any given study occurred by chance is much less than .05 or .01.

Nevertheless, the certainty that some statistically significant results will occur by chance alone in combination with the selective reporting of successful results is a very real problem that has been totally ignored in the literature. Admittedly, this problem can occur in any field, but it is especially likely to characterize the sex education literature because many evaluations are conducted and most articles are produced by teachers who have a self interest in publishing only successful results.

Nonrandomness of Courses Selected for Evaluation

When people read evaluations of sex education courses, they are rarely concerned about that particular course per se. Rather, they are typically concerned with the implications of those findings for sex education in general or for sex education in a particular community. That is, people tend to generalize or make inferences from these findings. In order for generalizations to be made to some larger population of courses, the courses evaluated must be a random sample (or more precisely a representative sample).

This raises the question, "How do courses evaluated as successful differ from those that are not considered successful or not evaluated at all?" Personal observations suggest that many, but not all, of the successful classes are taught by unusually charismatic teachers. If this is true, and if the success of classes is partially dependent upon charisma, then generalizations to other classes without charismatic teachers must be especially cautious.

Personal observations also suggest that many sex education teachers may be less opposed than the general population to both adolescent sexual activity and "deviant" forms of sexual activity. Undoubtedly, many teachers who measured the change in "permissiveness" or "tolerance toward deviant behavior" believed that such changes were good. Thus, the finding that sex education courses increase tolerance may be based upon only those courses taught by teachers who believe in and support greater tolerance. This raises the questions, "What is the impact upon tolerance of a course taught by someone who is not tolerant of adolescent or deviant sexuality?" and "Do the students become more tolerant, nevertheless, or do they become less tolerant?"

Although it is possible that successful sex education programs occur only in those communities particularly conducive to sex education, this appears rather unlikely, for the literature provides examples of success in a wide variety of social-cultural milieus. Many of the successful courses are in university or medical settings, but many others are in high schools in suburbs, inner-city areas, liberal communities, conservative communities, etc.

Although sex education courses have apparently increased the knowledge and tolerance of students in many types of communities, they may not successfully reduce teenage pregnancy in some communities for the following

reason. As noted in Volume 1, sex education programs may have relatively little effect upon the amount of sexual activity of participating adolescents, but they may reduce pregnancies by increasing the effective use of contraception. Despite the liberalization of many laws, many communities effectively deny adolescents access to the better forms of contraception. In those communities, sex education may not be able to have the desired impact upon the use of contraception.

The problems discussed above all affect the external validity of the findings (i.e., the validity of generalizing from these sampled programs to other sex education programs). The problems discussed below affect the internal validity of the studies (i.e., the validity of the conclusions about the program itself).

Absence of Pretest Data

Most studies reported both pre- and postscores and the differences between them. However, a few studies discovered in the literature review failed to observe the change over time and also failed to compensate with some other data for comparison (e.g., that from a control group). Because this failure represented such a flagrant violation of the experimental design, those studies are not discussed in this report.

Absence of a Control Group

A substantial number (but less than half) of the studies failed to include a control group. Although a control group is an essential feature of the classical experimental design, this failure has little impact upon the quality of the evidence whenever the sex education program is sufficiently short that the control group does not change significantly. Thus, when a high school sex education unit lasts only a week and when the pre and posttests are given immediately before and after the course, there is less need for a control group. Similarly, when a program for medical students lasts several weeks, a control group is not required, for the attitudes and behavior of the medical students are more stable at that age.

However, a control group is absolutely essential when evaluating a high school program of several months' duration, because adolescent years are years of considerable flux in knowledge, attitudes, and behavior. Without a control group a program could be incorrectly credited with an increase in knowledge or an improvement in student self-esteem, or the program could be unfairly blamed for an increase in sexual activity.

Nonrandom Assignment to the Experimental and Control Groups

Very few studies randomly assigned students to either the sex education class or some other class. Of those studies that did employ randomization, nearly all randomly assigned those students who signed up for the course to either the course that semester or to the same course the following semester. Thus, random assignment did occur, but neither the students in the sex education class nor the students in the control class were random samples of the school, and the question still remains, "Do those students who choose to take sex education courses differ from those who do not?"

Fortunately, the pretest data of some studies provide evidence for an answer. Unfortunately the evidence conflicts. A majority of the studies demonstrate that the two groups have no statistically significant differences. However, in a few studies, the students in the sex education class were apparently more sexually active, more concerned about becoming pregnant, and more interested in learning about contraception, and they therefore signed up for the class. The classes for which this was true tended to include rap sessions and to be more closely associated with the high school health clinic. This suggests that the extent to which students in a sex education class differ from other students may depend partly upon the history and structure of the class.

In another analysis not yet published, college bound students in comparison with other students were more knowledgeable, had better communication skills, and were less likely to take sex education courses because of their need to take college preparatory courses. To the extent that this is true, the effects of sex education may be underestimated.

If participants in a program differ from nonparticipants even before the program begins, this difference between the two groups can be partially controlled by comparing the changes over time of each group. If the participants change more in a positive direction than the nonparticipants, then this is evidence for success of the course.

However, there remains the possibility that an interaction effect occurs -- that those students who decide to take the class are more amenable to change than the control students, because of interest, need, or some other reason, and that accordingly, the control students would not change so much if they were to take the course.

Contamination of the Control Group

Many surveys of adolescents indicate that most adolescents gain most of their information about contraception and other sexual matters from their peers. Thus, when a sex education class effectively provides information to the students of that class, those students may in turn pass that information on to their friends, some of whom may be in the control group. To the extent that this contamination occurs, the effects of the sex education program are underestimated.

The importance of this contamination will obviously vary greatly with the school setting. If only a small proportion of the student body attends the instruction, then the effects upon the control group are likely to be minimal. On the other hand, if a course lasts for a full semester, and if a substantial proportion of some cohort of students (e.g., the senior class) attends the class, then the contamination may be significant.

Poor Instrumentation

Although poor instrumentation is also a problem with the surveys which are discussed below, the weaknesses of the instrumentation are quite different from those in surveys, and accordingly they're discussed separately.

All the studies except one used questionnaires to gather data and these suffered from a litany of faults. A major deficiency of most questionnaires is their attempt to measure too much with too little. For example, some of them attempted to measure knowledge about human sexuality with only five items. Others attempted to measure all attitudinal changes with fewer than five items. Such measures have relatively little value.

Second, there is rarely a rationale for the particular knowledge or attitude items included in the questionnaire. Rarely are the theoretical variables of interest specified, and thus, rarely is the adequacy of measuring those variables discussed.

Third, very few of the studies report any reliability or validity coefficients. Equally important, the discussions typically fail to indicate any concern with reliability or validity. Some of the items appear to have some face validity, but unless different judges assessed the validity and unless the items were pretested in some manner, even this face validity is suspect.

Underreporting or Overreporting of Behavior

Although only a few studies have examined the impact of sex education upon subsequent sexual behavior, these studies and future studies may be affected by the underreporting or overreporting of sexual behavior. The incorrect reporting of sexual behavior is actually a problem of validity, discussed immediately above, but because of its importance, it is discussed here as a separate problem.

In some communities, many teenagers, especially girls, may intentionally conceal their sexual activity. Some teenagers may have had sexual experiences that they subsequently perceive as exploitive or painful, and they may wish to ignore those experiences. Other teenagers may feel considerable guilt about their sexual activities and may not wish to admit to either themselves or to the researchers that they engaged in such behavior. Still others may conceal experiences because of a justified or unjustified fear of disapproval or reprisal from some authority. On the other hand, some respondents, especially males, may exaggerate their sexual experiences. They may lack self-esteem because of their lack of "sexual prowess" and they may compensate by enlarging upon past events. To further complicate matters, in other communities both males and females may underreport.

Successful sex education classes may increase the rapport between the teacher and students, may cause students to better accept their sexuality, and may increase the comfort with which students can discuss sexual behavior. If these three things occur, then sex education classes may reduce the amount of incorrect reporting. In turn, if incorrect reporting is reduced, it becomes difficult to separate changes in incorrect reporting from changes in behavior. That is, the actual effects of the class upon behavior may be obscured.

No Statistical Measures of the Importance of the Change

Although many studies faithfully report the statistical significance of

changes between pre and posttests, very few studies provide much information on the practical meaning or importance of these changes. This is a major flaw, because statistical significance is the result of both sample size and size of the change. Thus, when the sample size is sufficiently large, even a trivial change may be statistically significant. When studies fail to provide standard deviations for the scores and when they also provide mean scores that lack intuitive meaning, then it is especially difficult to assess the importance of the mean improvement in scores. A careful analysis of the information provided in numerous studies suggests that some changes applauded as statistically significant are actually very small. This means that some programs believed to be effective may actually be ineffective, and that factors other than participation in the course have a far greater impact upon the students.

Failure to Control for Pretest Sensitization

Several researchers have expressed a concern with the possibility that the pretests may sensitize the experimental group so that its members are more likely to learn the material or more likely to change in other ways. Accordingly the schools have used the Solomon four group problem. From a theoretical perspective, it does not appear likely that pretests will produce this sensitization, especially if the course lasts for a few weeks or more. Moreover, several studies which employed the Solomon four group design (c.f., Fetz and Johnson; 1971) suggest that pretests do not affect the program effects. Thus, this appears to be one potential methodological problem that deserves relatively little attention.

Suggestions for Improving the Experimental Studies

The suggestions discussed below logically reflect the major omissions in the studies and the major methodological flaws discussed above. Moreover, all these suggestions can be applied to the fundamental design being discussed here, namely, the experimental method applied to students. Some of the problems discussed above can best be solved by applying the experimental method to schools (rather than students), but because this is a fundamentally different method, it is discussed in Chapter 2.

Funding More Rigorous Studies

As indicated earlier, very few evaluations have received adequate financial support. If greater funds are provided, two important results may occur. First, all parts of the study may be completed with greater care and rigor. Second, the results of the study may be published even if they are negative. This will help offset the possible biased selection of only successful results.

Random Selection of Programs for Evaluation

To further test a possible bias in the literature, an evaluation team should randomly select a few different programs for evaluation and then publish the results. If these programs are as successful as others reported in the literature, then the possibility of bias is reduced and educators can more confidently generalize or make inferences about their findings. On the

other hand, if these randomly selected programs are less successful, then they demonstrate the need for research on why some programs are more successful than others.

Measurement of Long-Term Effects

Without question, evaluators of programs should administer at least two, or preferably more, posttests. Of course, the first posttest should be administered immediately after the course. Additional posttests should be given several months and perhaps even a year or two later. Because long term effects have not yet been measured, the optimal length of the follow-up cannot be accurately estimated. Some proponents of sex education argue that the skills learned in class may improve relationships with others indefinitely. If preliminary evidence suggests this is true, then perhaps students should be questioned as much as five years after completing the course.

Obviously, complications arise as additional posttests are given after increasingly long periods of time. For example, the mere cost of administration increases; the loss of subjects increases; and the statistical problems resulting from more observations and loss of subjects increase.

If care is not taken to ensure that all subjects are located and if posttests are administered more than a year after the course, then the differential loss of subjects may affect the validity of the findings. For example, if members of the control group are more likely to become pregnant than members of the sex education class, this fact might be obscured by the pregnant students dropping out of school and becoming unavailable for subsequent posttests.

Identification and Measurement of Potentially Important Outcomes of Programs

As discussed above, many potentially important outcomes are not measured, and those that are measured are not justified. In Chapter 4 of this volume are the results of a survey of expert opinion. These results clearly identify different factors that are believed to be important by the experts, and subsequent studies should attempt to measure all or most of these. However, our study in Chapter 4 should be replicated by others using somewhat different methods, different experts, and different statistical methods of analysis. Hopefully, the results will validate one another, but if they do not, then differences should be explored.

Evaluation of Programs

It is far more difficult to evaluate programs than single courses for several reasons. First, multi-year programs are likely to experience a greater loss of subjects. That is, the students are likely to leave the school program for a variety of reasons. Second, students in the program are likely to pass on information and skills to their friends who are not in the program. Third, in a course there is often a single teacher, a single group of students, a single class structure, etc., whereas, in a program there are many teachers, many different groups or classes of students, different courses, etc. Thus, everything becomes more complex. Finally, it takes more

years to evaluate a multi-year program.

However, most of these problems can be overcome by comparing students in carefully matched schools that are similar in all respects except the existence of the program. The problem of subject loss can be partly overcome by ensuring that the control subjects have been in that school the same number of years as the experimental subjects. If the schools are sufficiently far apart, then experimental subjects are not likely to pass on information to friends in the control school. Finally, if the program has been in effect for some years, there need be no time delay in evaluating it.

Random Assignment of Subjects

In most schools it is difficult to assign subjects randomly to a sex education class. However, in a few schools, some form of sex education is required for graduation, and in these schools, it may be possible to determine randomly the year in which students take the class. For example, if one random group of students takes the course during its sophomore year, it can be compared with random groups of students who will not take it until a later time (i.e., their junior or senior year). This provides a control group for one to two years. Of course, the protection of subjects from unnecessary control is a significant concern in this design.

Development of Instrumentation

This volume provides new or improved measures for all of the outcomes of programs identified as important. These measures hopefully represent a major first step, but they should be further validated and improved. Moreover, other methods should be developed. For example, with substantial additional work, different levels of different skills can perhaps be identified and possibly Guttman scales can be developed to measure those different levels; questionnaires which more accurately predict the probability of any person becoming pregnant can be developed; and personality inventories for teachers can be designed.

Although nearly all instrumentation relies upon paper-and-pencil tests, other methods should also be used. For example, outside observers can sit in classrooms and code behavior in either natural settings or artificial settings, and the assertiveness, communication, and/or decision-making skills of the students can be measured. Finally, some of the fears of students or their attitudes toward various sexual materials can be directly measured by using machines to measure their physical properties such as temperature, electrical conductivity, perspiration, heart rate, etc. Of course, when developing and using such measures, considerable importance must be given to the feasibility of using the instrumentation and to the protection of the subjects. All of these possibilities are more fully discussed in Chapter 4.

Solutions to the Incorrect Reporting of Sexual Behavior

In general, when using questionnaires to collect information, it is difficult to separate changes in behavior from changes in the reporting of that behavior. Moreover, no experimental design can overcome this problem. However, there are five partial solutions that should be further explored.

First, the pretest can be given after trust and rapport have been established in the classroom, but before the knowledge, values, attitudes, and skills of the students may have been affected. This would reduce the effects that changes in trust, rapport, and faith in the anonymity of the questionnaire would have upon the amount of incorrect reporting.

Second, the random response techniques can be used in some situations. This technique involves the respondent randomly answering either a non-threatening question or a sensitive question without anyone knowing which question was chosen. If the investigator independently knows the overall distribution of answers of the non-threatening questions, then he can estimate the distribution of answers to the more sensitive question.

Although this method has been praised as a solution to the problem of underreporting sensitive behavior, in fact, it is not a panacea. In several analyses of data collected by the National Opinion Research Center (NORC), Bradburn and Sudman (1979) state that the random response technique is not significantly superior to other methods such as anonymous questionnaires. Moreover, it increases the difficulty of the administration of the questionnaire and requires prior knowledge of the distribution of responses to the non-threatening question. Because some random method is used to determine whether the sensitive or non-threatening question is answered, the sample size must be reasonably large.

A third partial solution to reduction in incorrect reporting between pretests and posttests involves asking questions on the posttest about behavior prior to the pretest. The posttest data can then be used to verify the pretest data. Obviously, this approach has all the problems involved in asking questions about prior behavior: namely, the poor quality of recall, distortions produced by subsequent behavior, etc.

A fourth solution involves asking questions about the comfort with which sexuality questions are answered. If there is a strong correlation between comfort and correct reporting of sexual behavior and if comfort increases as a result of the class, then regression techniques can be used to attenuate the pretest responses. If there is a weak or negligible relationship between comfort in responding to questions and the covert reporting of sexual behavior or if comfort does not increase significantly during the course, then the problem would appear less crucial and there would be less need for adjustment of the pretest scores.

Finally, the students in a sex education class can be compared with a control group consisting of students in a different class with considerable rapport. Although this would not control for the increase in the acceptance of their own sexual behavior that the sex education students may experience, it would control for the increase in the perceived certainty of anonymity, trust, etc.

In sum, the change in the quality of reporting of personal sexual behavior may bias the evidence for the effects of sex education programs and the magnitude of the problem is not well known. However, there are several partial solutions to the problem that should be tried.

Development of Measures of the Importance of Change

There are at least three ways that the importance of the size of the change can be better assessed.

First, the importance of the program can be better estimated by giving more intuitive meaning to the change in scores. For example, if the scores represent the numbers of correct answers, and if the difficulty of the question and the ranges of the scores are provided, then a specified increase in correct answers has more meaning.

Second, if criterion levels for knowledge, skills, etc., are established, then the change in the proportion of people meeting the various levels will have intuitive meaning. For example, the statements, "the proportion of students who know how to use the different types of contraception effectively increased from 50% to 80%" has meaning. Of course, when providing this information, it is also important to specify how close the students were to the criterion level before taking the course.

Third, the importance of the sex education program can be assessed relative to the importance of all (or selected) other variables. There presently exist standard statistical procedures for this. Specifically, the statistic, eta squared, gives the proportion of all variation in the scores that can be attributed to the program. Essentially it describes how important the program is relative to all other variables. If there is a need to compare the importance of the participation in a sex education program with other selected and measured variables, then two-way analysis of variance or regression can be used.

Use of Analysis of Variance

If posttests are conducted at several points in time, then analysis of variance for repeated measures is an especially useful technique. It has two advantages. First, it can test for interaction effects. Second, it offers a single test of whether or not all the experimental and control pre and posttests significantly differ. In contrast, the t-test requires a separate test for each posttest. Although this use of analysis of variance has clear advantages, the inexperienced user should use it carefully.

Methods Used to Evaluate Programs: Surveys

Most studies which provide evidence for the efficacy of sex education programs employ an experimental design. Of the remaining studies, nearly all are surveys of adolescents. Although some of these surveys are conducted by teachers or educators, more commonly they are conducted by social scientists. Moreover, the goal of most of these studies is not to better understand the

effects of sex education, but to better understand adolescent behavior. Consequently, many of them obliquely examine the impact of sex education programs.

Strengths of the Surveys: Random Samples from Large Populations

The only major strength of the surveys is their sampling design. Several of them (c.f. Zelnik and Kantner 1977) selected random samples of adolescent women from the entire country. Because the samples were random, and because the sample sizes were large, generalizations can be made to the entire country. This is in great contrast to the experimental studies which only evaluate individual courses.

Weaknesses of the Surveys

In general, surveys have provided far less evidence for the effectiveness of sex education programs than have experiments. This is only partly because there have been fewer surveys than experiments. It is primarily because nearly all the surveys contain crucial flaws.

Poor Measurement of Participation in Sex Education Programs

The greatest weakness and the most crucial flaw of most surveys which attempt to measure the impact of sex education is that they failed to adequately measure participation in a sex education program. Most studies simply included one question, such as, "Have you taken a course in sex education?" or "Have you received instruction in sex education?" It is impossible to measure the amount of sex education instruction any individual has received with single questions of this type, because there is enormous variation in sex education instruction. Some sex education instruction is carefully woven into many different classes and is never labeled sex education. Other schools label as sex education the basic unit given to girls on menstruation. Still other schools provide an entire semester's course on sex education. Consequently, the phrases "sex education" and "sex education instruction" are interpreted very differently by different individuals. At the very least, the questionnaires need to ask about the topics covered, the structure of the class (e.g., lectures, discussions, rap sessions, or other activities), the types of assignments, and the duration of the total instruction. Because none of the surveys of adolescents has done this, they have relatively little value for the evaluation of sex education programs.

Failure to Control for Extraneous Factors and Assess Causality

A second major weakness with the surveys is that they fail to control statistically for other variables. This failure alone would destroy the validity of most studies. For example, a survey of high school students would probably reveal that those who have taken sex education classes are more sexually active. However, this is not because sex education classes necessarily increase sexual activity; rather, it is because upper classmen are more likely to have taken a course than lower classmen and upper classmen are also more likely to be sexually active. Thus, the relationship between participation in a program and sexual activity may be caused by class (year in high school) or age and the relationship is therefore spurious.

It is not easy to control for other variables, because the researcher must carefully identify, properly measure, and then statistically control all potentially confounding variables. Because there are many potentially confounding variables, the statistical controls need to be rather elaborate and thus the sample size needs to be large. However, none of the studies appeared to control for even the most obvious and easily measured factors such as age and race.

A closely related problem is the assumed direction of causality between two variables that are statistically correlated. For example, if past participation in a sex education course on the one hand and knowledge and tolerance toward others on the other hand are correlated, people may attribute greater knowledge and tolerance to the impact of the course. However, it is also possible that more knowledgeable and tolerant students choose to take sex education courses.

Suggestions for Improving Surveys

Some of the suggestions for improving surveys require that cases other than individual people (e.g., school districts) be analyzed. Because such methods represent a substantially different methodology, they are discussed in Chapter 2.

Asking Additional Questions

Those surveys based upon individuals can be improved by expanding the scope of the questionnaires. Not only should the questionnaires add many questions on self-esteem, skills, sexual activity, and contraception, they also need to add many items on the characteristics of the sex education program. The questionnaires that we have developed and that are discussed in Chapter 5 provide a comprehensive set of questions for both these features and outcomes of programs. Either these questions in particular or questions like them should be added to the survey questionnaires.

Control for Spurious Relationships

Because surveys can only control statistically for spurious relationships, those factors which might produce spurious relationships must also be identified, measured, and used in statistical analyses. This is not an easy task. However, this task can be substantially facilitated if researchers customarily use path analysis in their studies. Path analysis is recommended for two reasons. First, all path coefficients (also called betas in statistical packages such as SPSS) are standardized partial regression coefficients. Because they are regression coefficients, they describe the extent to which one variable affects another. Because they are partial coefficients, they automatically control for other variables in the model. Because they are standardized coefficients, they indicate the relative importance of different variables. Second, to produce the path coefficients, the researcher must first create a causal diagram which indicates 1) the important variables, 2) the possible relationships among all pairs of variables, and 3) the direction of causality of all possible relationships. Thus, path analysis forces the researcher to think about important variables,

their causal relationships, and possible spurious effects. Finally, the causal diagrams produced by path analysis tend to stimulate both model building and theory building and in the long run these models and theories will enable us to better understand the effects of sex education upon adolescent behavior.

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Chapter 2:

A THEORETICAL REVIEW OF POSSIBLE METHODS FOR EVALUATING SEX EDUCATION PROGRAMS AND RECOMMENDATIONS FOR PARTICULAR METHODS

Introduction

Whereas the previous chapter focused upon the strengths and weaknesses of actual studies, this chapter emphasizes the inherent strengths and weaknesses of different methods when they are optimally used. First, this chapter provides a scheme for classifying different types of methods. Second, it demonstrates the feasibility of each type. Third, it discusses the strengths and weaknesses of each type. Fourth, it recommends particular methodologies for different goals.

The chapter focuses upon methods of evaluating school programs, as opposed to non-school programs, because non-school programs are very diverse, and because different programs may require completely different methods. However, many of the ideas expressed in this chapter apply to some of the non-school programs.

A Classification Scheme for Categorizing Methods of Evaluation

In order to discuss systematically and comprehensively the various possible methods of evaluating sex education programs, it is necessary to develop a scheme both for determining the possible designs which exist and for categorizing them. This scheme must reflect some of the most important features of methods so that methods found within the same category will share common strengths and weaknesses. There are three characteristics of methods that appear crucial to the evaluation of sex education:

- (1) the unit of analysis
- (2) the basic methodological design
- (3) the data sources

The first characteristic is reflected in several similar questions: What cases are being studied? What is the unit of analysis? What is the level of aggregation? There are several logical and possible answers to these questions, namely: individual students or adolescents, school classes, schools, school districts, towns or cities, counties, and states. Sometimes the unit of analysis is confused by some people. For example, when students in a sex education class are compared with other students, students, not classes is the unit of analysis. In general, the unit of analysis is the units or cases which are counted to find the number of cases.

The second characteristic is reflected in two questions: What is the basic methodological design? Are confounding variables controlled by controlling subjects or by statistically controlling variables? There are, of course, only two commonly used methods for collecting quantitative data, experimental designs and surveys. Other common research methods may collect empirical data, but if they systematically collect quantitative data, they nearly always use experimental or survey methods to do so.

Although experimental and survey methods are typically considered mutually exclusive, when the unit of analysis is some aggregate of people, the two methods can be used in different combinations, some of which have particularly useful combinations of traits. In an ideal situation, for example, numerous experiments can be used to estimate the effectiveness of numerous individual programs. These programs can then be treated as cases in a survey which relates the features of each program to the success of each program (as measured by each individual experiment). Alternatively, surveys can be used to assess the impact of individual programs, and the programs themselves are components of a carefully designed experiment.

The third and final characteristic of methods is also reflected in a question: How are data obtained from each case? There are four useful possibilities. First, data can be obtained directly from the respondents. If the unit of analysis is individuals, then each person provides the information. If the unit of analysis is some aggregate of individuals, then the spokesperson for each group is the respondent (e.g., teachers for classes, principals for schools, and superintendents for school districts). Second, information can be obtained from public documents or public statistics. Third, if the unit of analysis is some aggregate of people, then an experiment in each case can produce data for that case. Finally, if the unit of analysis is some aggregate of people, then a survey within each case can produce data for that case.

If the purpose of a study is to evaluate a particular class or a particular program, then the outcomes of the class instruction or program need to be measured. Thus, for most purposes data on outcomes is needed, and for some purposes data on features is needed.

It is relatively easy to obtain information about the features of programs. For example, if the unit of analysis is the class, the teacher can provide desired information. If the unit of analysis is the school district, then the school district can often provide information about the number of courses being offered, the number of students enrolled in them, and the features of the classes or programs themselves. When the unit of analysis is some larger unit, then other documents can be analyzed (e.g., state guidelines). Although some of these data must be collected from individuals or documents, it is relatively easy to obtain these data.

In contrast, it is relatively difficult to obtain data about the outcomes of programs. For example, it is more difficult to obtain data about the attitudinal and behavioral changes of students who have taken sex education courses than it is to measure the structure of those courses. Similarly, it is more difficult to obtain data on the attitudinal and behavioral changes of all students in a school district who received sex education instruction, than

it is to describe the sex education program in that school district. The same relative difficulty applies to other units of analysis.

Because outcome data is needed for all good evaluations of programs, and also because it is more difficult to obtain, this discussion focuses upon the method of obtaining outcome data, not features data. Because features data can be rather cheaply obtained, several different methods may be used to obtain it. On the other hand, obtaining outcomes data is more costly, and typically only one method can efficiently be used to obtain it. Thus, this discussion does not consider various combinations of methods of obtaining outcome data, despite the theoretical desirability of doing so in some situations.

These three characteristics (unit of analysis, basic design, and data source) produce the three dimensional classification scheme in Table 2-1. The words in each of the resulting 56 cells specify whether the particular combination of methods represented by that cell is feasible. Question marks indicate that the particular combination of methods is feasible in some situations but not others. If the combination of methods is not feasible, then the numbers provide the reason(s) why it is not feasible. Those cells with the letters REC represent recommended or especially favorable combinations of methods.

There are twelve especially favorable combinations, fourteen feasible combinations, seven combinations that are sometimes feasible, and thirty-five infeasible combinations. A discussion of the reasons for limited feasibility and a detailed discussion of the recommended combinations follow an explanation of the table.

Although the basic structure of this table may appear reasonably clear, in fact, that structure contains subtle issues which require clarification or emphasis. It should be fully realized that the crucial difference between the experimental design and the survey design is that the research team has no control over the cases in the survey design, but does have control over the cases in the experimental design. Therefore, when experimental designs are applied to aggregates of individuals, the research team must have control over that larger aggregate or unit. Otherwise, it is not an experimental design, but rather a survey using experimental data. For example, if a research team is studying school districts, and is using the experimental design, then it must have control over the existence or type of sex education in each school district. If it simply has control over the students within existing programs, then the design is a survey using experimental data.

In order to illustrate the content of the table, we trace the methods that might be used to analyze schools (Row 3 of Table 2-1). Specifically, the steps to be taken for each design are given in stepwise fashion in Table 2-2.

Table 2-2: The Important Steps to Be Completed for Each Type of Study of Schools

Experimental Designs Using Outcome Data from Respondents (Column 1)

- 1) The population of schools of interest is defined, and a random sample of schools is obtained.
- 2) Schools are randomly assigned to the experimental group, in which case the students receive sex education instruction, or to the control group, in which case the students do not receive this instruction. Both before and after the instruction, the school's spokesperson (e.g. the principal) provides information about important attitudes and behaviors of the students.

Note: This method is not feasible because 1) research teams can rarely assign schools to experimental and control groups (Reason 3) and 2) school personnel can not provide accurate information about student behavior (Reason 5).

- 3) The data are analyzed using experimental statistics.

Experimental Designs Using Outcome Data from Public Statistics (Column 2)

- 1) The population of schools of interest is defined, and a random sample of schools is obtained.
- 2) Schools are randomly assigned to the experimental group, in which case the students receive sex education instruction, or to the control group, in which case the students do not receive the instruction. Both before and after the instruction public statistics provide information about important attitudes and behaviors of the students.

Note: This method is rarely feasible because 1) public data rarely provide accurate information on student behavior (Reason 2) and 2) research teams can rarely assign schools to experimental and control groups (Reason 3).

- 3) The data are analyzed using experimental statistics.

Experimental Designs Using Outcome Data from Separate Experiments in Each Case (Column 3)

- 1) The population of schools of interest is defined, and a random sample of schools is obtained.
- 2) Schools are randomly assigned to the experimental group, in which case the students receive sex education instruction, or to the control group, in which case the students do not receive the instruction. Separate experiments in each school provide information on the attitudes and behaviors of the students. That is, within each school the attitudes both before and after the instruction are measured, and the changes are

TABLE 2-1: DIFFERENT COMBINATIONS OF METHODS AND THEIR FEASIBILITY

Unit of Analysis	EXPERIMENTAL DESIGN				SURVEY DESIGN			
	Outcome Data From Respondents	Outcome Data From Public Statistics	Outcome Data For Each Case From Separate Experiments	Outcome Data For Each Case From Separate Surveys	Outcome Data From Respondents	Outcome Data From Public Statistics	Outcome Data For Each Case From Separate Experiments	Outcome Data For Each Case From Separate Surveys
Individuals	1 YES REC	2 NO:2	3 NO:1	4 NO:1	5 YES REC	6 NO:2	7 NO:1	8 NO:1
Classes	9 NO:5	10 NO:2	11 ??:A REC	12 ??:A REC	13 NO:5	14 NO:2	15 YES REC	16 YES
Schools	17 NO:5	18 ??:A,B,C	19 ??:A REC	20 ??:A REC	21 NO:5	22 ??:B,C REC	23 YES REC	24 YES
School Districts	25 NO:3,5	26 NO:3	27 NO:3	28 NO:3	29 NO:5	30 ??:B,C	31 YES	32 YES
Towns/Cities	33 NO:3,5	34 NO:3	35 NO:3	36 NO:3	37 NO:5	38 YES REC	39 NO:4	40 YES
Counties	41 NO:3,5	42 NO:3	43 NO:3	44 NO:3	45 NO:5	46 YES REC	47 NO:4	48 YES
States	49 NO:3,5	50 NO:3	51 NO:3	52 NO:3	53 NO:5	54 YES REC	55 NO:4	56 YES

KEY

First Line in Each Cell
Number of the cell

Second Line in Each Cell

- YES: This combination of methods is feasible.
NO: This combination of methods is not feasible.
?: This combination of methods is feasible in selected situations.

Reasons why particular combinations of methods are not feasible.

- 1: This combination of methods is meaningless.
- 2: The public data do not exist in the form required.
- 3: It is extremely difficult to control the sex education instruction for these cases.
- 4: It is very difficult to arrange for individual experiments.
- 5: The respondents cannot provide accurate data for the outcomes of the programs.

Reasons why particular combinations are feasible in some situations.

- A: Occasionally the research team can control whether or not classes or schools include sex education instruction.
- B: Occasionally pregnancy data can be obtained for each school or school district from local clinics.
- C: Occasionally the boundaries of schools or school districts coincide with the boundaries of other political jurisdictions for which public data exist.

Third Line in Each Cell

- REC: This cell is particularly recommended.

aggregated so that there are a small number of outcome scores for each school.

Note: This method is rarely feasible because research teams can rarely assign schools to experimental and control groups (Reason 3).

- 3) The data are analyzed using experimental statistics.

Note: These steps just described eliminate unnecessary redundancies (e.g., assigning schools to experimental and control groups and then within the experimental schools, assigning students to experimental and control groups). When these unnecessary redundancies are eliminated, this combination of methods is identical to the following combination of methods.

Experimental Designs Using Outcome Data from Separate Surveys in Each Case (Column 4)

- 1) The population of schools of interest is defined, and a random sample of schools is obtained.
- 2) Schools are randomly assigned to the experimental group, in which case the students receive sex education instruction, or to the control group, in which case the students do not receive the instruction. Both before and after the instruction, separate surveys in each school provide information on the attitudes and behaviors of the students. These scores are then aggregated so that there are a small number of outcome scores for each school.

Note: This method is rarely feasible because research teams can rarely assign schools to experimental and control groups (Reason 3).

- 3) These data are analyzed using experimental statistics.

Survey Designs Using Outcome Data from Respondents (Column 5)

- 1) The population of schools of interest is defined, and a random sample of schools is obtained.
- 2) Information about the features of each school's program is obtained in any feasible way. The school spokespersons (e.g., the principals) provide information about the features of the programs and the attitudes and behaviors of the students in each school.

Note: This method is not feasible because school personnel can not provide accurate information on student behavior (Reason 5).

- 3) The data are analyzed using survey statistics.

Survey Designs Using Outcome Data from Public Statistics (Column 6)

- 1) The population of schools of interest is defined, and a random sample of schools is obtained.

- 2) Information about the features of each school's program is obtained in any feasible way. Public statistics provide information about the attitudes and behavior of the students in each school.

Note: This method is rarely feasible because public statistics can rarely provide accurate information on student behavior (Reason 2).

- 3) The data are analyzed using survey statistics.

Survey Designs Using Outcome Data From Separate Experiments in Each Case (Column 7)

- 1) The population of schools of interest is defined, and a random sample of schools is obtained.
- 2) Information about the features of each school's program is obtained in any feasible way.
A separate experiment in each school provides information about the attitudes and behaviors of the students. That is, within each school, students are randomly assigned to experimental and control groups, and given both pre and posttests. This data is then aggregated so that there are a small number of outcome scores for each school.
- 3) These data are then analyzed using survey statistics.

Survey Design Using Outcome Data From Surveys in Each Case (Column 8)

- 1) The population of schools of interest is defined, and a random sample of schools is obtained.
- 2) Information about the features of each school's program is obtained in any feasible way.
A separate survey in each school provides information about the attitudes and behaviors of the students. This data is then aggregated so that there are a small number of outcome scores for each school.
- 3) These data are then analyzed using survey statistics.

Feasibility of Different Combinations of Methods

Obviously, some of the designs represented by different cells in Table 2-1 are not feasible for a variety of reasons. This section first describes the feasibility of conducting experiments and surveys in general and then discusses the feasibility of each type of data collection.

Conducting Experiments with Different Units of Analysis

The many existing studies using the experimental design and using students as the unit of analysis demonstrate that this method is politically feasible. However, applying the experimental design to larger units of analysis such as classes, schools, town or cities, etc. is either problematic or impossible. In some large and progressive school districts, the availability of outside funds and pressure from either the state board of

education or community groups may cause the district board of education to allow a research team to determine which classes within schools or which schools will develop and evaluate sex education instruction. Because such evaluations may possibly occur in select school districts, but not others, question marks are in cells 11 and 19. On the other hand, it is extremely unlikely that any research team can control the existence of sex education in most school districts, towns and cities, counties, or states, and accordingly, the experimental design can not be applied to these units of analysis.

Conducting Surveys with Different Units of Analysis

The few studies employing the survey method properly demonstrate that such studies are feasible. However, all the existing studies use individuals as the unit of analysis. This is not necessary. In fact, surveys of all the different units of analysis are feasible, and several of them are especially recommended. They will be discussed in greater detail later.

Using Outcome Data from Respondents

Nearly all of the existing studies use information collected directly from the respondents about their own attitudes and behavior. There are good reasons for this. If questionnaires are clearly and properly designed, and if the respondents answer them honestly, then they produce accurate, reliable, and valid information. In contrast, even if questionnaires are properly designed, the spokespersons of classes, schools, school districts, etc. can not answer accurately or reliably the questions about the students' attitudes and behavior. In sum, data on many important outcomes are reliable and valid only if they describe those respondents themselves.

Using Outcome Data from Public Statistics

Public agencies do not systematically collect data on the attitudes of adolescents, nor do they systematically collect data on many behaviors of adolescents. However, they do collect data on some crucial outcomes of programs, namely, contraceptive use, births, and abortions. The availability of this data at relatively little cost suggests exciting possibilities.

Unfortunately, two factors limit the feasibility of using this data, the anonymity of the data and the poor quality of the data. Because these two problems vary with the source of data, they are described for each of the sources.

The first possible source is the schools or school districts themselves. Numerous people have hoped that schools or school districts would have data on the number of pregnancies each year in the school or school district. No one can state categorically that such data do not exist in any school or school district in this country. However, it appears extremely unlikely that such data exist and are accurate in more than a handful of schools or school districts. We have discussed this issue with many school nurses, teachers, and principals in different parts of the country. Their answers are unanimous: when young adolescents become pregnant, they are likely to obtain abortions, and these abortions are often obtained without the knowledge of the school or school district. Moreover, most schools have an inherent interest

in minimizing the reported number of pregnancies, and this also contributes to errors in estimates. The recent experience of a large school district in Maryland provides an example of how inaccurate the data can be. For years there were no reported cases of pregnancies in any of the schools in that district, but then, after a new superintendent of schools was elected, a substantial number of reported pregnancies suddenly appeared. Undoubtedly, the increase was caused by changes in reporting, not by sudden changes in the sexual behavior of students.

The second possible source is neighborhood clinics or hospitals where abortions can be obtained or babies delivered. However, in many communities this data is not valid for three reasons. First, young adolescents, desiring anonymity, commonly seek abortions in urban areas or in clinics some distance away. Thus, the number of births or abortions in clinics near schools may have little relationship to the sexual behavior of the students in those schools. Second, in some communities private doctors deliver babies and perform abortions, but their patients are not included in the statistics. Thus, the clinic data may be misleading. Third, the vast majority of the clinics do not collect information from the patients and consequently, they cannot provide statistics for individual schools or school districts.

However, all of these problems can be considerably overcome in some communities. In some isolated communities, most adolescents have their deliveries or abortions in a small number of clinics or hospitals in that community. If all the clinics and hospitals are willing to collect data on the patient's schools, then statistics for each school can be estimated with reasonable accuracy. As indicated earlier, this data is presently being collected in Humboldt and Del Norte Counties in California and provides some of the best evidence for the impact of sex education upon pregnancies.

The third source of data is city and county statistics. Because most of these data are provided by clinics and hospitals, they have the same problems that characterize the clinic and hospital data. City and county statistics are typically based upon populations and geographical areas that are larger than the corresponding areas for the clinic and hospital data. Thus, the problem of teenagers having babies or abortions outside of the statistical region is somewhat reduced. On the other hand, the organizations that provide the city and county data cannot provide information on the schools of their patients, and thus they cannot provide data for individual schools or school districts. This is a critical flaw unless sex education instruction is similar throughout the entire city or county, and this homogeneity rarely exists.

In sum, public statistics cannot be easily used in most cities or counties. However, if most teenagers have their babies or abortions in a reasonably small number of community clinics or hospitals, and if those clinics and hospitals are willing to cooperate by collecting and then providing information on the patients' schools, then it may be possible to accurately measure the impact of sex education programs upon pregnancies.

Using Outcome Data from Separate Experiments in Each Case

Although none of the existing studies has conducted individual

experiments in numerous classes or schools, and then used the measures of success in a survey or experiment, this is a feasible and useful combination of methods for some units of analysis.

It should be fully realized that by definition this combination of methods can not be applied to individuals as the unit of analysis. The reason is that this method involves using an experiment with individuals to obtain data on the success of some larger aggregate of people which is in turn analyzed statistically in an experiment or survey with other similar aggregates of people. For example, experiments might be conducted in 50 different classes in order to measure the success of each of the 50 classes. Survey methods might then be applied to this sample of 50 cases. Other characteristics of the classes could be correlated with the success of the classes.

For all aggregated units of analysis, there are two potential problems. The first is cost. Although conducting separate experiments in each case is costly, it is possible to do so in large research projects for some units of analysis. However, as the unit of analysis becomes larger, the costs also become larger.

The second problem is the administrative feasibility. It is time consuming, but nevertheless possible to arrange for experiments in numerous (e.g., fifty) classes or schools. However, it becomes exceedingly difficult to arrange for experiments in fifty or so cities, counties, and states where the students in each case might belong in different schools or classes. If the students in each case are not selected from different schools, then they do not constitute a good random sample of that city, county, or state.

Using Outcome Data from Separate Surveys in Each Case

Because surveys do not require either control, or permission to control students from the appropriate authorities, surveys can be used to gather information for each case. It is feasible, although costly, to take a random sample of students in each of numerous cities, counties, or states, to aggregate the data, and to include it in a larger survey of cities, counties, or states.

Recommended Combinations of Methods

Of all the feasible combinations of methods (cells in Table 2-1), twelve are particularly useful, efficient, and valid. These methods are recommended for particular goals and are discussed in this section.

Cell 1: Basic Design: Experimental
 Unit of Analysis: Individuals
 Source of Outcome Data: Respondents

This is the best design for evaluating a sex education class. For several reasons it can be used cheaply, easily, and naturally: 1) classes in sex education and other subjects provide natural experimental and control groups; 2) occasionally students can be randomly assigned to classes in a particular semester or year; 3) teachers customarily give tests at the end of

the unit of instruction or semester, and can easily give pretests at the beginning of the semester; 4) except for the senior year, students are commonly in the same school the following year and are thus available for delayed posttesting; and 5) the data collected from the questionnaires can be easily analyzed using experimental statistics (e.g. comparing means). In sum, this combination of features provides the best control over other variables that might produce spurious relationships, and it contains most of the characteristics of a natural experiment with all its special advantages.

This design is equally suited to evaluating a sex education program. However, if that program consists of more than a single class, it may be administratively difficult to have some students participate in all of the program while having other students participate in none of it. This problem is especially acute when the program includes components in many classes over many years.

For the purpose of evaluating a single sex education class, this design does have one major drawback, namely, the attitudes and behavior of the experimental and control groups can contaminate each other. For example, it is hoped that sex education classes will increase the effective use of contraception, but obviously, decisions about the use of contraception are made by both partners in the sexual encounter. When members of the sex education class are sexually active, they are likely to be sexually active at least part of the time with students not in the class. This mixing may improve the contraceptive use of students not in the class and may make less effective the contraceptive use of students in the class. To the extent that this happens, the potential effects of sex education upon effective contraceptive use are underestimated.

For two obvious reasons, this method is not designed to provide generalizations about the effects of sex education. First, it is based upon a sample size of one. Second, the sample is not randomly chosen. Thus, the success (or failure) may be due to a particularly charismatic teacher (or a particularly poor teacher), to the inclusion (or omission) of particularly important topics, etc.

Cell 5: Basic Design: Survey
 Unit of Analysis: Individuals
 Source of Outcome Data: Respondents

This combination of methods differs from that just discussed in that a survey rather than an experiment is conducted. Although commonly considered inferior to experiments, surveys do have a number of advantages that experiments lack. Of greatest importance is the sampling flexibility of a survey. At one end of the spectrum, a survey can be taken of students in a particular school and those having taken a course can be compared with those who have not taken a course. Such a survey provides information about the effects of sex education in that particular school. At the other end of the spectrum, a survey of all adolescents across the country can be taken. If valid questions are asked about both the features of the adolescent's program and also the attitudes and behaviors of that adolescent, then 1) the effectiveness of sex education across the country can be estimated, and 2) the importance of particular features can also be estimated. In contrast it is

extremely difficult to conduct a nationwide experiment. Thus, a single survey facilitates generalizations far better than a single experiment.

On the other hand, surveys suffer from a major disadvantage relative to experiments. They can not easily control confounding variables nor demonstrate with certainty the direction of causality. Such control is attempted by measuring important variables and then controlling for them statistically. However, this is not easy. Consider the example used in the previous chapter. As adolescents grow older, they become increasingly likely to have been sexually active, and they also become increasingly likely to have received sex education instruction. The resulting spurious relationship can be partially controlled by statistically controlling for age. However, adolescents receive sex education at different times, and they become sexually active at very different times regardless of whether they receive sex education instruction. Thus, controlling for age only partially eliminates the spuriousness caused by the passage of time.

A second disadvantage is that the proper statistical analysis of survey data requires considerable methodological sophistication. To best control spurious relationships and estimate the direction of causality, special types of regression analysis and path analysis are needed. Many people conducting these evaluations are not familiar with these methods.

Finally, it should be realized that longitudinal data can be collected with successive surveys and that these data can help clarify the direction of causality of some relationships among the variables. However, the longitudinal data from surveys is not as powerful as that resulting from experiments.

<u>Cells 11,12,19 & 20:</u>	Basic Design: Experimental
	Units of Analysis: Classes or Schools
	Source of Outcome Data: Experiments or Surveys
	within Each Class or School

In a previous section, this chapter stated that after redundancies are eliminated, Cell 11 is the same as Cell 12, and Cell 19 is the same as Cell 20. The only difference between Cells 11 and 12 on the one hand, and 19 and 20 on the other is that Cell 11 and 12 evaluate classes, whereas Cells 19 and 20 evaluate schools. If the school program consists primarily of a sex education class, then the two are identical. Even if the school program includes more than a single class, the cells have similar strengths and weaknesses. Thus all four cells are discussed simultaneously.

The methods represented by these cells provide the best means of evaluating the effectiveness of the program features that characterize the experimental schools or classes. By assigning different classes or schools to the experimental and control groups, the idiosyncracies of different classes or schools are controlled. For example, the charisma of a particular teacher may affect the outcomes of that particular class, but that class is just one of many classes that is being evaluated, and consequently the unusual success of that particular class has little effect upon the final mean scores.

This design has a second major strength. If the sample of classes or

schools is both sufficiently large and random, then conclusions reached about the sample can be safely generalized to the entire population. Moreover, if the sample size is sufficiently large, interaction effects can be more accurately evaluated. That is, it may be possible to determine that the class or program structure is effective in particular types of communities, but not in others.

Third, the contamination problem described above is reduced if schools are assigned to experimental and control groups. For example, if all students in an experimental school receive sex education instruction during their sophomore year, then during the following years they are more likely to be dating adolescents who have received sex education (i.e., each other).

From a methodological standpoint, this design contains only one major weakness. Unless there are many experimental groups, each of which contains a different class or program structure, then different structures and different features cannot be studied. Given that there presently exist many combinations of class and program features, and given that there is little evidence at this time that a few particular features are crucial while others are unimportant, this flaw is important.

From a practical standpoint, this design also has difficulties. Significantly, all four cells have question marks in the table. This means they can be conducted only in special situations. This restricted feasibility is caused by the great difficulty in controlling which classes or schools teach sex education. In some large school districts, it may be possible to obtain this control, but more commonly this control is not possible. The feasibility of these cells is also called into question by the cost. Obviously, it would cost a great deal to develop and evaluate programs in a reasonably large sample of classes or schools. In reality, these problems of administrative control and cost will undoubtedly reduce the sample size. In turn, reduced sample size will limit the generalizability of the findings.

Cells 15 & 23: Basic Design: Survey
Units of Analysis: Class and Schools
Source of Outcome Data: Experiments within Each Class
or School

These are the best methods of evaluating the importance of different features of classes and programs. They differ from the four cells discussed above in one major respect. In these two cells, there is no attempt to control which classes or schools teach sex education. Instead these classes or schools are simply surveyed. Although surveys typically provide less valid evidence for the effects of specific programs, this particular configuration of a basic survey design using experimental evidence for each case combines some of the most important advantages of each method and incorporates only a few of the weaknesses.

Specifically, this design is more administratively and economically feasible because it does not require control over the classes or schools. Thus, the number of classes or schools included in the sample can be substantially increased, and equally important, they can be chosen randomly from a much larger population of classes or schools. This will, of course,

greatly enhance generalizability.

Second, classes and schools with very different structures and features can be included in the sample. Consequently, the relative effectiveness of these different structures and features can be assessed.

Third, the effectiveness of each individual class or program is still being assessed in the most effective manner possible; namely, using the experimental design specified in Cell 1.

Of course, no method is perfect, and this one contains one relatively minor disadvantage. Because classes and schools are not being randomly assigned to experimental and control groups, it is possible that certain interaction effects are affecting the external validity (generalizability). For example, communities which choose to have sex education classes or programs in their schools are obviously different from other communities by this very fact. Possibly these communities are different in other respects, and possibly if the same programs were developed in schools where they don't currently exist, they would be ineffective, even if they're effective in schools currently with programs. In other words, if programs are not developed and evaluated in a random selection of schools, then the extent to which the programs can be transferred to other schools cannot be ascertained definitively.

This problem should be recognized, but it is not as crucial as the problems described in other designs, and it should not be exaggerated. If a program works effectively in a variety of communities, then this is good evidence that it will work in many new communities where it has not yet been tried.

Cell 22: Basic Design: Survey
 Unit of Analysis: Schools
 Source of Outcome Data: Public Statistics

Whenever this method can be properly employed, it is the best method for estimating the impact of sex education upon pregnancies. The method requires that all providers of abortion and pregnancy services within a community ask their adolescent patients the school which they are attending and that all this information be assembled so that pregnancy rates for each high school are accurately estimated. If information is continually collected for a number of years, then both cross-sectional and longitudinal studies are feasible.

The greatest advantage of this design is that it incorporates the direct measurement of one of the two ultimate outcomes (pregnancies) of sex education programs. That is, it does not have to rely upon questionnaires for respondent generated reports of previous behavior. Admittedly, it does require that clinics ask their teenage clients the name of their school, but this is much different from asking many questions about numerous sensitive topics.

An important principle in methodology is that important conclusions should be validated with maximally different types of methods. If different methods produce different types of evidence for the same conclusions about the

effectiveness of sex education programs, then the validity of both the methods and conclusions is enhanced. Alternatively, if different methods produce conflicting conclusions, then both the methods and the conclusions should be questioned. Because the counting of pregnancies at clinics is so different from data generated by self-reports, this design is especially important.

A second major advantage of this method is that it does not rely upon a sample. If the data are correctly gathered at all clinics, hospitals, etc., then the estimates of pregnancy rates are based upon the entire population of concern, not a small sample of that population.

A third major advantage is that data can probably be collected over time, if it can be collected at all. This is especially important because it facilitates the comparison of pregnancy rates before a sex education program is initiated with pregnancy rates after a program is developed. Moreover, this change over time in pregnancy rates can be compared with the corresponding changes in schools which do not develop a sex education program.

A final advantage is that this method may be relatively cheap. If the appropriate clinics and hospitals collect data anyway, and if only a small number of clinics or hospitals in the community provide pregnancy and abortion services to adolescents, then the cost of collating this data may be small, especially in comparison to a large survey.

As noted earlier in this chapter, this design can be used in only limited situations. It requires that the vast majority of the pregnant adolescents visit a limited number of doctors, clinics, and hospitals in the community, and that all of these doctors, clinics, and hospitals cooperate in obtaining and then providing their statistics for each school. Obviously, if many adolescents attend clinics in other communities in order to assure anonymity, then these conditions are not met, or if individual doctors provide services to many adolescents and fail to keep school records, then the conditions are not met. Moreover, two additional changes may increase error in estimates of school pregnancy rates. First, women can now administer to themselves a pregnancy test, and thus they need not visit a clinic to test for pregnancy. Second, the reduction of public funds for abortions may be causing some adolescents with limited funds to obtain cheaper illegal abortions. At the present time, the number of adolescent women who test themselves for pregnancy and who obtain illegal abortions is probably small, but the number will vary in different communities; it may increase in the future; and it cannot be accurately estimated.

Cells 38, 46 & 54: Basic Design: Survey
Units of Analysis: Towns or Cities,
Counties, and States
Source of Outcome Data: Public Statistics

These methods are essentially secondary statistical analyses of existing statistics. They differ from each other only in their units of analysis.

These methods are recommended not because they are especially good methods, but because they are very different from most other methods described. They cannot provide evidence for the success of specific programs,

but they can provide some evidence for the collective impact of programs in different cities, counties, or states.

A second advantage of these methods is that new outcome data need not be collected directly from individuals, and therefore the data collection stage is relatively cheap (at least in comparison with the experiments of classes and schools described above).

Presently there are several sources of data. The National Center for Health Statistics can provide computer tapes of birth certificates. When these are properly analyzed by the computer, they can provide the number of births for any age group for major cities, and counties and states. These are available for most recent years. The Alan Guttmacher Institute and the Center for Disease Control can provide for each county and state estimates of the numbers of abortions among young people. Together these data can provide estimates of the number of pregnancies.

By definition, the number of pregnancies in any county or state will change because the number of pregnancies per 1,000 adolescents changes or because the number of adolescents changes. In many counties, both change and it is therefore necessary to obtain pregnancy rates for each city, county, or state. The sources above can provide estimates of the numerators for these rates. The 1970 census can provide estimates of the denominators for that year and the 1980 census can provide data for 1980. With that data, it will also be possible to interpolate to the years between 1970 and 1980.

While the census conducted every 10 years can provide data for major cities, and for all counties and states, the annual samples can provide data for some specific metropolitan areas, counties, and states for other years.

Although these data can be obtained rather easily, they nevertheless pose problems. First, it is not possible to get rates for all cities, counties, and states for all years. Second, the numbers of abortions given to adolescents in different areas are simply educated estimates, and they often rest upon different sets of assumptions. Thus, the rates are not strictly comparable from one county to another. Third, some rates are affected by political considerations, thereby rendering their accuracy and validity still more suspect.

A major problem with these methods is that they attempt to measure effects which at the present time are very minor and very subtle. Currently, about 37% of all high schools in this country offer special courses in sex education. In those schools, probably fewer than 25% of the students actually take that course. Consequently, fewer than 10% of all students take a separate course. If sex education courses totally eliminated unwanted pregnancies among the students in these courses, then the pregnancy rates of counties without programs would differ by only 10% from counties where 10% of the students took separate courses. This small difference of 10% will undoubtedly be overshadowed by other sociological characteristics of the counties, and by error in the data.

Conclusions

This chapter has discussed six important points. First, there are three important and basic decisions that a research team must make: 1) What type of basic design should it use, experimental or survey? 2) What should be the unit of analysis? and 3) How should data be obtained?

Second, the experimental study of individual respondents is the single best method of evaluating a specific sex education class or program.

Third, a survey of adolescent respondents is the best inexpensive method of assessing the impact of programs in a large population (e.g., in the nation).

Fourth, a survey of classes or schools using as outcome data the experiments within each class or school is an excellent method of assessing the relative importance of different features of programs.

Fifth, if conditions permit, data collected from community clinics on pregnancies for each school provide the best method of estimating the impact of a school program upon pregnancies.

Finally, existing data on contraceptive use and pregnancies can rarely be used to evaluate specific programs, and they are useful in studying cities, counties, and states, only because these methods are maximally different from other methods.

Chapter 3:

METHODS FOR OBTAINING NEW DATA ABOUT IMPORTANT FEATURES AND OUTCOMES OF PROGRAMS

Introduction

This chapter discusses different methods of obtaining new information about important features and outcomes of sex education programs. It concludes that written questionnaires, answered anonymously by the respondents, provide the single best method of collecting new data on the numerous possible outcomes of programs. However, researchers should be encouraged to develop and use alternative methods to avoid an over reliance upon questionnaires.

Different Methods of Measuring Important Features and Outcomes of Programs

There is a multitude of methods for measuring the important features and outcomes of programs. These different methods are classified according to the scheme presented in Table 3-1. Although this scheme does not contain mutually exclusive and exhaustive categories, it does have a logical consistency and it does include the major basic methods. The entries in that table are discussed in order.

Table 3-1: Methods of Measuring Features and Outcomes of Programs

- I Direct Observations of Behavior
 - in natural settings
 - in artificial settings (e.g., laboratories)
- II Direct Observations of the Consequences of Behavior
 - with public statistics
 - with other statistics and data
- III Questions about Behavior
 - with written questionnaires
 - in verbal interviews

When considering the various methods of collecting new data, several criteria should be applied:

- the methods must produce reliable and valid data,
- they must measure as many of the important features and outcomes as possible,
- they must be relatively cheap and efficient,
- they must be sufficiently clear and simple that methodologically unsophisticated personnel can use them effectively, and they also must be sufficiently powerful so that sophisticated research teams can use them effectively,
- they must be useful in a wide variety of communities,
- they must be useful in both experimental and survey designs,
- they must be useful in both small and large samples of classes,
- they must be capable of evaluating both single classes and entire programs,
- they must not unnecessarily invade the privacy of the students.

Direct Observations of Behavior: In Natural Settings

Because all the ultimate goals of sex education programs involve changes in specific behaviors of adolescents, directly observing and measuring different behaviors in natural settings is a method with a clear face validity. On the other hand, it is also obvious that some of the most important behaviors (e.g., amount of sexual activity and use of contraception) are very private and cannot be directly observed. Thus, this method is severely limited.

Despite this limitation, skilled observers can observe students in social settings such as classrooms, lunchrooms, playgrounds, dances, etc. and can thereby document some outcomes of programs (e.g., changes in self-esteem as they become apparent in behavior, changes in decision making and communication skills, and changes in social interaction). Moreover, skilled observers can more easily and directly assess the features of the classroom. For example, they can observe the freedom of the students to ask questions comfortably, the topics covered, the depth of discussion, and teacher skills.

In the classroom and in other settings, observers can systematically code all behavior in a very structured manner similar to that developed by Bales (1951) or Flanders (1970). Alternatively, if they are trained psychologists, they can take careful unstructured notes which they subsequently analyze.

Using observers does pose several problems. First, as already noted, many important types of behavior and interaction in many key settings simply

cannot be observed. Second, the cost of observing much behavior quickly becomes excessive. Not only must the observers be highly trained, but in addition they require considerable time. Even if outcomes of programs are ignored and only features are studied, observers need to sit in many classes in order to obtain a representative sample of classroom interaction. Third, the mere presence of the observers in any of the mentioned settings may affect the very behavior being studied. For example, when classrooms are being observed, teachers may be especially careful to perform well, and students may be especially reticent to speak in class and to share personal experiences. Our personal experiences as classroom observers confirm this. Fourth, the students' personal rights are jeopardized, especially if they are observed in settings outside of the classroom. Finally, the data may not be as valid as believed, because the values, beliefs, skills, etc. of the observers also have an impact upon the observations. Numerous studies have indicated that inter-coder reliability for the direct coding of behavior is low unless the observers are very carefully trained.

Direct Observations of Behavior: In Artificial Settings

Psychologists and therapists have developed numerous methods for analyzing interaction in artificial settings such as laboratories. In some, subjects will discuss their problems, solve dilemmas, role play, participate in simulations, etc. Sometimes the interaction is coded directly by observers or by computers. Other times interaction is videotaped and then discussed by the staff. More recently in this bio-feedback era, numerous instruments have been developed for measuring fear, tension, excitement, sexual arousal, alpha states, etc. Sometimes these instruments are used in combination with role playing, simulations, discussions, etc.

These methods do have numerous advantages. First, the comprehensive records (e.g., videotapes) of behavior facilitate thorough analysis and reanalysis. New ideas can be tested against previously collected data. Second, the flexibility of the experimental lab gives the research team the ability to control much of the setting and the experiments. For example, they can try different methods of measuring fear until the most valid is found. Or, they can continually improve the scenarios provided for role playing. Third, the multiple methods of collecting data facilitate measurement of validity and the comparison of different methods. As a result, these intensive methods probably measure various skills better than any other method.

On the other hand, these methods have definite limitations. First, they cannot measure several behaviors believed to be important outcomes (e.g., use of contraception), nor can they measure important features of the classroom. Second, most evaluators do not have access to these laboratories or the instruments used within them. Although in theory evaluators can purchase them, in fact, the laboratories and their instrumentation are very costly to purchase, maintain, and use. Third, their external validity is somewhat suspect, because they are artificial. Adolescents may have very different types of feelings and behaviors in the bright lights of experiments than they have in actual interaction with friends. For example, a laboratory with observers cannot replicate the feelings and environment of the back seat of a car. Finally, these methods also raise administrative and ethical problems about using student subjects.

Direct Observations of Consequences of Behavior

If sex education programs have various outcomes, these outcomes may in turn have various consequences that can be measured. The variety of possibilities is great, and a creative imagination can probably produce many. For example, if a particular sex education program improves self-esteem, then more students from that school may attend college. If that program improves conflict resolution skills, then fewer fights may occur at that school or elsewhere. If a program improves the use of contraception, then neighboring drugstores may sell more condoms or other contraceptives. If a program reduces pregnancies, fewer students may drop out of that school and both abortion and birth rates for adolescents may decline in that area.

These examples properly suggest that changes in previously collected public statistics (e.g., pregnancy rates) represent a very important type of consequence. Although these statistics are very important, they were previously discussed in Chapter 2 and, accordingly, are not further discussed here. It should be fully realized, however, that there are many other types of quantitative data that are not typically included in the common definitions of public data, but which can be used for research purposes (e.g., sales rates of condoms in neighboring stores).

The major advantage of all these methods is that they are unobtrusive. They do not require the participation of the students, and they are not likely to affect the behavior of the students. The second major advantage of these methods is that they are maximally different from questionnaires and other types of methods more frequently used. Thus, they can provide very different types of evidence.

As a group, they also have two major disadvantages. First, it is commonly difficult, if not impossible, to link an observed consequence with a particular cause or a particular group of students. For example, if more people begin to attend college, this increase may be caused by better self-esteem, a greater recognition of the need for college, more pressure from peers or parents, or other changes. If neighborhood stores sell more condoms, this increase may be the result of a sex education class causing more students to use some protection, students switching from pills, or pharmacies displaying them more openly. The second problem is that much unobtrusive data cannot be collected systematically. For example, drug stores may have only scanty data on condom sales and may not wish to share that data. The number of fights may not have been recorded and the principal's memory may be the only source of data. Similarly, statistics are available for a few particular clinics and for large geographic areas, but not for all residential areas.

Questions about Behavior: From Written Questionnaires

The common use of questionnaires in existing studies is a manifestation of the strengths of questionnaires. If properly designed, they may reliably and validly measure all of the important features and outcomes of programs. This is the only method of obtaining data with this property. Moreover, questionnaires are extremely versatile: they can be used in many communities;

they can be used in both experiments and surveys; they can be used in the evaluations of both individual classes and entire programs; and they can be used with both large and small samples. In comparison with other methods of collecting data, questionnaires can do all of this cheaply and efficiently. Moreover, anonymous questionnaires are the only method of collecting information about individuals without severely jeopardizing the privacy of the students.

This combination of traits is outstanding, and for this reason, questionnaires are the single preferred method for collecting new data.

The major weakness of questionnaires is their dependence upon respondents' reports. Response biases, fatigue, etc. reduce the accuracy of responses. Moreover, the respondents may be answering questions carefully and honestly, but the answers are perceptions of reality, not the important reality itself.

The necessary reliance upon reports of behavior is especially troublesome when measuring sexual behavior of teenagers. Some teenagers may wish to conceal experiences because they feel guilty about those activities, because the experiences were painful and the teenagers prefer forgetting or ignoring them, or because they fear the possible disapproval of authorities who may see the questionnaires. Other teenagers may enlarge upon their actual experiences to enhance their self-esteem or to compensate for a perceived lack of sexual prowess.

There are three major reasons why this inherent weakness does not greatly reduce the relative value of questionnaires in measuring many of the features and outcomes. First, the researcher can control some error, response biases, etc. by using social desirability scales to eliminate those items which do have socially desirable answers by randomizing the order of items, and by including equal numbers of positive and negative scales. Moreover, the underreporting and overreporting of sexual behavior can be reduced by using some of the methods described in chapter 1 (e.g., establishing rapport, assuring anonymity, and verifying behavior with subsequent questionnaires). Second, the perception of reality is often important itself. This is particularly true for outcomes such as self-esteem, because self-esteem is a perception and it is that perception which is important. Third, alternatives typically provide less accurate data at greater cost, and for some features and outcomes (e.g., self-esteem), there are no feasible alternatives.

Questions about Behavior: In Verbal Interviews

Interviews often provide provocative insight into behavior when they are part of exploratory, unstructured surveys. They are particularly useful when the goal of a study is "verstehen" or in-depth understanding of some phenomenon. Because few studies have explored in-depth the consequences of programs, unstructured interviews should be used by some researchers, particularly those with psychological skills. On the other hand, unstructured interviews cannot adequately measure all the features and outcomes deemed important by the experts.

In order to properly measure all the features and outcomes, interviews

must utilize questionnaires and must be far more structured. This raises the question, "Will the data typically be better if the questionnaires are answered anonymously in writing by the respondents themselves or if interviewers ask the respondents the question and then mark the answers?"

Interviewers perform two basic functions. First, they fill administrative duties (e.g. they bring the questionnaire to the respondents, they make certain the respondents are not distracted by other phenomena; they make certain the questionnaires are completed, and finally, they collect the questionnaires). Although these are important functions, they can also be filled by the teacher, who customarily does all of these things.

Second, interviewers can facilitate the measurement of some outcomes by establishing rapport with the respondents, answering questions when they arise, probing where necessary, elaborating upon some questions, etc. These functions must be done on a one-to-one basis, and cannot be completed by the teacher. Thus, interviewers, especially highly trained interviewers, can probably obtain better information about such psychological and sociological phenomena as self-esteem, decision-making skills, and communication skills.

On the other hand, the interviewer's presence normally destroys the anonymity of the responses and this loss of anonymity may render less valid the responses to all questions with clearly socially desirable answers. For example, adolescents are less likely to admit their sexual activity or their non-use of contraception if they must give that information to some interviewer who is recording the information. Random response techniques can provide some anonymity, but their applications are limited.

A final consideration, of course, is cost. Whereas teachers can administer questionnaires to their students rather inexpensively, having someone interview each of the students can become very costly. This is especially true if the interviewers are trained psychologists.

In sum, written questionnaires can probably provide more valid data about important socially desirable or undesirable behaviors. Interviews can provide more valid data about other features and outcomes, but the cost is substantially greater.

Conclusions

There are two major points made in this chapter. First, if questionnaires are properly constructed, they provide the single best method for obtaining information about numerous features and outcomes of programs. Second, other methods have distinct advantages and should also be used in some studies. For example, if accurate pregnancy rates for schools can be obtained from community clinics, then these data should be used. In combination, all these methods will produce more valid evidence than any single method.

Chapter 4:
IMPORTANT FEATURES AND OUTCOMES
OF SEX EDUCATION PROGRAMS

Introduction

Whereas the previous chapter discussed the methods for evaluating sex education programs, this chapter identifies specific features and outcomes of programs that should be measured. The following chapter then provides specific questionnaires for measuring these important features and outcomes.

Although the literature on sex education is more voluminous than expected, this literature has not identified potentially important features, outcomes, or ultimate goals of programs. Moreover, the literature has not mapped out possible causal relationships among these variables. All of these things are done in this chapter. In addition it provides the ratings by experts of the importance of all identified features and outcomes.

Goals of Sex Education Programs

The first goal is the reduction of unwanted adolescent pregnancy. This goal is clearly important, provides the rationale for this contract, and provides the impetus for a great amount of nationwide activity. The large number of teenagers who become pregnant and the negative consequences of these pregnancies are briefly discussed in the first volume and are described in much greater detail in the literature.

The second goal is the facilitation of positive and fulfilling sexuality. This goal should not be confused with the facilitation of sexual activity. Sex education professionals typically define "sexuality" broadly. When so defined, it refers not only to sexual intercourse, but to a broad range of interactions among people. For some adolescents, a more positive sexuality may result from reduced sexual activity, while for other adolescents, it may result from increased sexual activity. Thus, this goal actually involves the improvement of interpersonal relationships and psychological health.

This goal is intentionally broad, all encompassing, and somewhat vague. Whenever we attempted to make it more precise, either individuals or groups of people objected to it. As presently stated, this second goal is somewhat of a "catch-all" category like "maximizing happiness." It therefore encompasses many more specific goals other than reducing pregnancy.

Identification of Potentially Important Features and Outcomes

After reviewing the literature and discussing programs with professionals, we created a preliminary list of potentially important features

and outcomes. We then extensively supplemented and clarified this list during a series of meetings with approximately 20 sex education experts. These experts included both adolescent members of sex education classes who were experts by virtue of their age and role, and adults who were professionals in the field of sex education. They also included experts with widely differing viewpoints. In these meetings the distinctions and relationships among features, outcomes, and goals were clarified using the causal diagram in Figure 4-1. That is, the experts were asked to add 1) outcomes which might facilitate the two goals and 2) features which might produce the desired outcomes. These meetings were essentially a series of pretests. They were continued until increasingly minor and increasingly few changes in the list were suggested. At that point, there was a consensus that the items were both clear and exhaustive.

Despite the care in producing the list, an analysis of the subsequent ratings and further research indicated that a few items had been omitted. These few items were added to the list and rated at a subsequent time by a smaller number of experts. The final list of potentially important features and outcomes of sex education programs contains 239 items which are presented in Tables 4-2 and 4-3 below.

Methods of Rating the Features and Outcomes

To evaluate the importance of each item, we obtained a sample of experts and then asked that sample to rate each item.

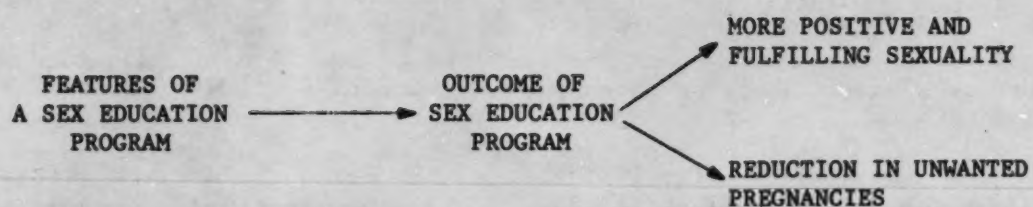
Selection of the Sample of Raters

Because an identifiable population of sex education experts did not exist, we could not take a random sample of that population. Nevertheless, we desired a sample that 1) contained experts, and 2) incorporated different opinions, geographic regions, etc. To obtain such a sample, a committee of nine prominent people in the field of sex education carefully selected 215 professionals all of whom had demonstrated competence in the field. Many of the professionals are members of the American Association of Sex Educators, Counselors, and Therapists (AASECT), the only major national organization for sex educators. However, because AASECT members may differ in important respects from nonmembers, other professionals are also included. Significantly, the sample includes members 1) from all geographic regions of the country, 2) with different ideological viewpoints, and 3) with different professional relationships with adolescents (e.g., sex educators, adolescent counselors, and family planning counselors).

One caution should be mentioned. Although the sample includes professionals with different ideological orientations, it is undoubtedly rather liberal in general, and undoubtedly includes few very conservative members who are opposed to sex education. However, this does not mean that the sample is biased. Rather, it reflects the fact that few sex education professionals are strongly opposed to sex education. Most people who are ideologically opposed to sex education in general or to many specific features of programs are not experts in the field.

One hundred thirteen professionals rated and returned the items. This is

**FIGURE 4 -1: INITIAL CAUSAL RELATIONSHIPS AMONG
MAJOR GROUPS OF VARIABLES AND GOALS**



a response rate slightly greater than 50%. Because a few of the ratings apparently contained errors, they were excluded, leaving one hundred usable ratings. Thus, the final response rate is slightly less than 50%. This response rate is reasonably high by most social science standards. Moreover, an analysis of the respondents indicates that the final sample contains the same geographic, ideological, and professional diversity discussed above.

In sum, the sample is not random, but the caliber of its members and the heterogeneity of its members make it an important sample of opinion.

Rating of the Items

The professionals rated each item on a 1 to 9 scale with "1" and "2" representing "not-at-all important," "5" representing "moderately important," and "8" and "9" representing "extremely important." Half the professionals rated each item according to its importance in reducing teenage pregnancy, while the other half rated each item according to its importance in facilitating a satisfying and fulfilling sexuality.

For each criterion and for each item, both the mean and median rating were calculated. These measures provide summaries of the opinions of the experts.

The correlation coefficient between the means and medians across the items was .98 for one criterion and .99 for the other. Because these correlations are so high, either the mean or median can safely be used. However, we selected the mean for two reasons. First, the means tended to be slightly lower, and hence are more conservative. Second, the mean ratings are lowered substantially if any of the ratings of the given item are very low. In contrast, the median may be unaffected by a few very low ratings. Thus, in this second manner, the mean is more conservative.

Methods of Improving and Evaluating the Quality of the Data

Procedures for Enhancing the Data Quality

Because the number of items to be rated was large, fatigue or lack of concentration may have produced error. To reduce this error, we used two procedures. First, we randomly ordered the groups of items on each list sent to the raters. That is, approximately 100 different versions of the lists were sent to the raters. Although each list may have been affected by fatigue or response errors, these errors should be randomly distributed, and accordingly, the mean of the ratings for each item is much less likely to be affected by these errors.

Second, we excluded from the final analysis all ratings which contained readily visible response errors. Those ratings which were eliminated most commonly contained a preponderance or series of "9's." Less frequently they contained other clear response sets. Those raters who rated many successive items as "extremely important" may have believed that all those items were extremely important. However, they probably used insufficient care in rating the items. Because the more conservative alternative was to remove these questionable ratings, they were excluded. However, a comparison of the mean

ratings both with and without these responses indicates that the mean ratings changed only slightly (never more than .2) and that the major conclusions remain the same. In sum, randomly ordering the groups of items and excluding ratings with clear response sets probably eliminated much of the error in the ratings.

Tests of the Effects of Political Orientation and Sample Bias

Sex education in general is controversial and specific features of programs (e.g., the discussion of contraception, abortion, and homosexuality) are especially controversial. If ideological orientations of the professionals strongly affected their ratings, then the validity and the value of the ratings are substantially reduced.

To test the extent to which ideological orientations affected ratings, we conducted three tests. First, and most important, we related whether or not an item was controversial with the ratings of that item (see Table 4-1). We considered controversial those items involving religious values, advocacy of sexual intercourse, sexual techniques, masturbation, oral sex, prostitution, rape, homosexuality, alternative life styles, contraception, and abortion. Although other items may be somewhat controversial among some groups, these topics are clearly the topics which have created the greatest controversy in this country. Items were also divided into three groups according to their ratings. In the first group are those items which were rated as extremely important or very important by nearly all the experts. In the second group are those items which were rated extremely important by a majority of the raters, but which were given lower ratings by a significant number of other experts. Finally, in the third group are those items which were more commonly rated as only moderately or not-at-all important.

If the professionals were especially liberal on controversial features and allowed their conservative-liberal orientations to affect their ratings of importance, then a disproportionately large number of controversial items would have been rated uniformly as very important and would appear in the first group. Table 4-1 demonstrates that this is not the case. In fact slightly smaller percentages of controversial items than noncontroversial items were uniformly considered very important (.39 versus .43 for pregnancy reduction and .46 versus .49 for fulfilling sexuality). The differences in these percentages should not be emphasized, however, for they are neither large nor statistically significant. If the professionals were very conservative and allowed their biases to affect their ratings, then the percentage of controversial items rated as moderately or not-at-all important would be significantly less than the percentage of noncontroversial items in that category. Again, this is not the case. On one criterion the difference is small and in the predicted direction; while on the other criterion the difference is small and in the opposite direction. In neither case are the differences statistically significant. Finally, if some experts were liberal and others were conservative, and if they allowed their orientation to affect their ratings, then the percentage of controversial items falling into the second group (containing many high ratings and some moderate or low ratings) should substantially exceed the corresponding percentage for noncontroversial items. For pregnancy reduction there is a small, but statistically insignificant difference (17% versus 11%), while for fulfilling sexuality the

**Table 4.1 Relationship Between Whether Items Are
Controversial and Ratings of Items (N = 214)**

	Controversial Items		Uncontroversial Items	
Items Rated "Very Important" by Most Experts	39%*	46%**	43%	49%
Items Rated "Very Important" by a Majority of Experts and Rated Less Important by Some Experts	17%	15%	11%	14%
Items Rated Less Than "Very Important" by a Majority of Experts	43%	39%	46%	37%
Totals	100%	100%	100%	100%

* Percentages on the left represent the first criterion, "Importance in Reducing Teenage Pregnancy."

** Percentages on the right represent the second criterion, "Importance in Facilitating a Positive and Fulfilling Sexuality."

difference is truly negligible (15% versus 14%). In general, the lack of a relationship between the amount of controversy of an item and the rating of the item strongly suggests that ideological orientation had little impact upon the ratings.

As a second test of the extent to which ideological orientation affected the ratings, we compared the items in the second group for each criterion. If ideological orientation strongly affected the rating of some items and caused them to fall into the second group, then 1) the two groups of items should contain the same items and 2) these items should be the controversial items. Neither of these events occurred. Of the 51 different items that fell into either of the two groups, only 8 were in both groups. More importantly, only two of the eight items were controversial.

Finally, as a third test we factor analyzed the items found in the second group of each criterion. In both factor analyses the first factors explained more than 30% of the total variance. Of the twelve items with factor loadings greater than .60 on these major factors, fewer than half were controversial items. Moreover, other factors did not represent a "controversial" factor.

Each of these tests clearly has its own weaknesses. Nevertheless, all three of them indicate that the ideological positions of the members of the sample did not cause them to rate some features higher than others. That is, liberal-conservative ideologies did not affect the relative rating of the items.

However, a caveat is in order. Professionals in sex education are probably more liberal than the public in general, and these more liberal opinions are probably reflected in the data. Thus the ratings of the experts would probably be higher in general than ratings by the public if the latter were to be measured. However, it should also be realized that these professionals are far more knowledgeable than the general public about the impact of programs upon adolescent relationships and pregnancies.

Effects of Sample Size

One hundred professionals rated the items, with half of them rating the items on each criterion. Thus, each of the means is based upon a sample of 50, not 100 ratings. Although a larger sample would have increased the accuracy of the results, the existence of considerable agreement on many items suggests the accuracy of the mean ratings is very good. Specifically, the 95% confidence interval is only ± 0.3 . Thus, if the sample mean is 6.0, the true mean is probably between 5.7 and 6.3. Those items with the highest mean ratings have the greatest consensus, and thus their accuracy is even greater.

Summary of Data Quality

In sum, the data appear reasonably reliable, valid, and accurate for the following reasons:

- 1) The pretesting of all the items improved the clarity of the items and ensured that most important or potentially important items were included.

2) Although the sample was not random, it included many well-known professionals in different professional roles, in different regions, and with different ideological positions. Moreover, three tests indicated that ideological position probably had little impact on ratings.

3) Although the sample sizes are not large, the sampling error due to sample size is small, because the means of ratings are presented and used in the discussion and because there was considerable agreement (low variance) within each item.

4) We excluded all ratings which included clear response sets or errors caused by fatigue, lack of concentration, etc.

Results

Importance of Items

In this study an item is considered important if it is rated as extremely important (a rating of 8 or 9 on the 1 to 9 scale) by at least 50 percent of the professionals. This criterion, like all cut-off points in assessing importance, involves some arbitrariness. However, there are three reasons for this choice. First, there is obviously something traditional, logical, and natural about discussing a "majority" opinion. Second, this criterion causes a reasonable number of items to be included. Third, this criterion causes many items commonly discussed in the literature to be included, and it causes items deemed less important by the literature to be excluded.

The group of items rated extremely important contains items with varying unanimity. That is, some of the items were rated extremely important by nearly all the professionals, while others were rated extremely important by only 50 percent. Although the mean of a distribution typically provides information about the center of a distribution, and not about the homogeneity of the scores, the mean rating of each item does provide considerable information about the unanimity of opinion for these items considered important. (This is partially caused by the fact that all ratings are based upon a 1 to 9 scale.) An analysis of the distributions indicates the following. If the mean rating of an item exceeds 8.0, then at least 70% of the experts rated the item as extremely important (8 or 9) and at least 90% rated it as very important (7, 8, or 9). Thus, these items are clearly considered very important by nearly all the professionals. If the mean rating of an item is between 7.5 and 8.0, then at least 56% of the experts rated it as extremely important, and 72% rated it as very important (7, 8, or 9). Thus, these items are supported by a clear consensus, but they have less unanimity than the items with means greater than 8.0. Finally, the items with a mean rating between 7.0 and 7.5 have a substantial proportion of lower ratings. This indicates that either the items reflect disagreement or the items are important in some settings, but not in others. None of the items rated extremely important on either criterion by 50 percent of the experts had a mean less than 7.0 on that criterion.

All of the items were rated on two criteria, importance in reducing unwanted pregnancy and importance in facilitating a positive and fulfilling sexuality. An important theoretical question is whether or not these two

goals are compatible. Are some features important in reducing pregnancy unimportant in facilitating good relations with others, or vice versa?

To fully answer this question we conducted two tests. First, for each item we found the difference between the two means representing the two criteria. For items considered extremely important by a majority of the raters, the mean absolute difference was found. The mean absolute difference is simply the average of the differences after any minus signs have been removed. If minus signs had not been eliminated, then a negative difference would have cancelled a positive difference and the mean of the difference would have been misleadingly small. The mean absolute difference is only .3 and the largest difference is only 1.5. This method clearly indicates that the two goals are highly consistent.

Second, we correlated the means of the items on the first criterion with the means of the items on the second criterion, and then found the same correlation for the medians. Both correlations are .95. This also strongly suggests that the two goals are compatible and that features and outcomes of programs important to the one goal are also important to the other. In fact, these correlations are so high that either criterion can be used in place of the other. Consequently, in the remainder of this chapter we shall simply refer to "importance" without referring to the criterion.

Important Features and Outcomes of Programs

In Tables 4-2 and 4-3 are all the items rated by the professionals. All extremely important items are organized in the table both by content and by the results of a factor analysis discussed in Chapter 5. Items not rated as extremely important are listed at the end of each section. For all items in the tables the means on both criteria are provided.

The tables clearly demonstrate that many features and outcomes are perceived as potentially important in reducing unwanted adolescent pregnancies and facilitating a positive sexuality. All of these important features and outcomes should be measured. The questionnaires discussed and provided in the following chapters provide a method of doing so.

TABLE 4-2. FEATURES OF PROGRAMS WITH MEAN RATING FOR EACH CRITERION

PART 1. TOPICS FOR DISCUSSIONS AND ACTIVITIES

Items Rated Extremely Important***

Mean #1*	Mean #2**	
		PHYSIOLOGY
7.8	7.6	discussions of anatomy and physiology (including physical changes during adolescence)
7.5	7.4	discussions of the biological aspects of human reproduction
8.4	8.0	discussions of the probability of becoming pregnant
7.5	7.3	discussions of the process of pregnancy and childbirth
7.6	7.9	discussions of normal body variations
		SEX RELATED ACTIVITIES
7.5	7.5	discussions of dating, necking, and petting
7.4	7.7	discussions of emotional and social aspects of sexual intercourse
7.5	7.7	discussions of the role of love and commitment in sexual activity
8.1	8.2	discussions of human sexuality as an aspect of total personality
8.1	7.5	discussions of the relationship between one's self-image and one's sexual behavior
8.0	8.0	discussions of emotional and social needs and changes during adolescence
7.7	7.3	discussions of the advantages and disadvantages of premarital sexual activity
8.4	8.0	discussions of the probability of becoming pregnant
7.3	7.3	discussions of the social consequences of adolescent pregnancy and marriage
7.0	6.8	discussions of the economic consequences of adolescent pregnancy
8.0	7.6	discussions of the student's experiences, attitudes, and feelings about sexual activity
6.9	8.2	discussions of the range of normal sexual behavior
6.1	7.3	discussions of alternative life styles
6.2	7.4	discussions of homosexuality
7.4	8.0	discussions of masturbation

* This is the mean rating on the importance of reducing pregnancy.

** This is the mean rating on the importance of facilitating a positive and fulfilling sexuality.

*** These items received a rating of "8" or "9" on a 1 to 9 scale by a majority of the sex educational professionals surveyed.

6.6	8.0	VD discussions of venereal disease or sexually transmitted disease
7.6	8.2	MYTHS discussions of common myths (e.g., penis size determines pleasure or masturbation causes mental illness)
8.0	7.3	VALUES discussions of the individual student's values
7.7	7.2	discussions of long range life goals (e.g., children and careers)
8.0	7.6	discussions of the student's experiences, attitudes, and feelings about sexual activity
8.0	7.9	discussions of the student's experiences, attitudes, and feelings about sex roles
7.8	8.0	PRESSURE, EXPLOITATION, AND ASSERTIVENESS discussions of peer pressure
7.9	7.1	discussions of sexual exploitation among adolescents
8.3	7.8	discussions of avoiding unwanted sexual experiences
7.1	6.5	discussions of assertiveness techniques
7.9	7.7	CONTRACEPTION discussions of family planning
8.1	8.1	discussions of the advantages and disadvantages of each contraceptive method
8.0	8.1	discussions of fears and fallacies about each contraceptive method
8.3	8.1	discussions of the effective use of different birth control methods
8.0	7.8	discussions of sources of sex-related information and of contraception (e.g., specific family planning clinics)
7.5	7.6	SKILLS discussions of the appropriate concern and responsibility for other people
8.1	7.9	discussions of decision-making and problem solving techniques
7.5	7.3	discussions of how to care about and be supportive of others
7.9	7.6	discussions of how to improve communication skills with peers, parents, and others
7.8	7.5	discussions of how to resolve interpersonal conflicts with peers, parents, and others

Items Not Rated Extremely Important****

7.2	6.7	discussions of sexual assertiveness
6.1	5.6	discussions of the student's own individual fertility
6.4	6.2	discussions of the laws pertaining to birth control methods
7.0	6.8	discussions of the economic consequences of adolescent pregnancy
7.3	7.3	discussions of the social consequences of adolescent marriage
6.8	7.0	discussions of human sexual response
6.7	6.6	discussions of the effects of drugs and alcohol on sexual behavior and response
5.2	5.4	discussions of sexual techniques
5.9	6.2	discussions of oral sex
4.9	5.4	discussions of prostitution
5.3	6.2	discussions of deviant sexual behavior
5.1	6.1	discussions of sexual dysfunctions (premature ejaculation, inorgasmic disfunctions, etc.)
6.8	7.1	discussions of gynecological exams
6.8	6.7	discussions of the effects of the mass media on sexuality
6.0	7.3	discussions of rape
7.2	7.2	discussions of abortion
6.8	7.3	discussions of sources of help for sexual problems
4.8	5.6	discussions of pornography
4.7	6.0	discussions of the relationship between sex and aging
5.5	5.6	discussions of problems of overpopulation

**** These items did not receive a rating of "8" or "9" on a 1 to 9 scale
by a majority of the sex educational professionals surveyed.

PART 2: TEACHER CHARACTERISTICS

Items Rated Extremely Important

MEAN MEAN

#1 #2

KNOWLEDGE

- | | | |
|-----|-----|---|
| 8.4 | 8.4 | teacher knowledge about facts, issues, materials, etc., relevant to human sexuality |
| 7.7 | 8.0 | teacher with previous participation in courses or workshops relevant to human sexuality |
| 7.4 | 7.0 | teacher who reads about recent research in human sexuality |

ENTHUSIASM

- | | | |
|-----|-----|---|
| 8.4 | 8.6 | teacher genuinely enthusiastic about teaching sex education |
|-----|-----|---|

SUPPORTIVE DISCUSSION SKILLS

- | | | |
|-----|-----|---|
| 8.9 | 8.8 | teacher who can discuss aspects of human sexuality with comfort |
| 8.8 | 8.6 | teacher capable of effectively handling questions potentially embarrassing to either the teacher or the student |
| 8.6 | 8.4 | teacher sensitive to the varying vulnerability of the students |
| 8.8 | 8.7 | teacher with genuine warmth, empathy, openness, concern, and respect for others |
| 8.7 | 8.6 | teacher capable of gaining the trust of students |
| 8.5 | 8.5 | teacher with good rapport with students |
| 8.7 | 8.7 | teacher capable of creating a classroom environment conducive to the expression of feelings and opinions |
| 8.5 | 8.5 | teacher whose teaching is nonjudgmental |
| 7.5 | 7.4 | teacher who accepts alternative sexual life styles |
| 8.8 | 8.7 | teacher with good listening skills |
| 7.9 | 8.1 | teacher whose guilt, anxieties, etc., about his/her sexuality do not affect his/her classroom instruction |

TRUST OF ADMINISTRATION AND COMMUNITY

- | | | |
|-----|-----|--|
| 7.8 | 8.1 | teacher capable of gaining the trust of the administration and the community |
|-----|-----|--|

Items Not Rated Extremely Important

- | | | |
|-----|-----|--|
| 2.1 | 2.1 | teacher younger than 35 |
| 1.8 | 1.9 | teacher older than 35 |
| 1.5 | 2.0 | male teacher |
| 1.5 | 1.9 | female teacher |
| 4.0 | 4.2 | team teaching |
| 5.2 | 5.8 | team teaching with both sexes represented |
| 4.9 | 4.3 | teacher with professional experience in family planning (e.g., a doctor, counselor, or educator in a clinic) |
| 5.1 | 5.2 | teacher with values and a life style similar to that of the community |
| 6.4 | 6.4 | teacher capable of teaching "chastity" as a valid system |

PART 3: CLASSROOM CHARACTERISTICS

Items Rated Extremely Important

MEAN MEAN

#1 #2

SUPPORTIVE CLASSROOM ATMOSPHERE

8.3	8.2	trust among the students and teacher
8.2	8.4	good rapport among students and the teacher
8.5	8.7	classroom atmosphere with genuine warmth, empathy, openness, concern, and respect for others
8.5	8.5	classroom environment conducive to the expression of feelings and opinions
8.4	8.5	the discussion of aspects of human sexuality with comfort
8.6	8.5	the effective handling of questions or comments potentially embarrassing to either the teacher or student
8.7	8.6	comfortable atmosphere for asking questions
8.3	8.5	confidentiality of views expressed by students in class
8.3	8.3	a nonjudgmental classroom environment
7.7	7.7	advocacy of sexual activity consistent with the individual's own values
7.0	7.2	advocacy of sexual activity consistent with the use of birth control
8.4	8.3	recognition of the differing values of the adolescents
7.8	7.8	recognition of the differing needs of the adolescents from diverse socio-economic backgrounds
8.6	8.4	recognition of the varying vulnerabilities of the students

KNOWLEDGE OF FACTS AND ISSUES

8.1	8.2	discussions and other activities based upon a solid knowledge of the facts, issues, and materials relevant to human sexuality
-----	-----	---

FREEDOM TO EXPLORE TOPICS

8.6	8.6	freedom to explore any issues and topics raised by students about human sexuality
-----	-----	---

RESOURCES AND ACTIVITIES

8.1	8.1	class discussions led by the teacher with considerable student input
7.2	7.1	class discussions with teenage parents about the experiences and responsibilities of parenting
7.3	7.3	group exercises designed to increase trust, sharing of feelings, sensitivity, etc.
7.0	7.1	role playing and psycho-drama as a learning tool
7.6	7.4	opportunity to examine and handle contraceptives
7.2	7.7	appropriate films and other resource materials
7.8	7.9	assignments aimed at improving skills as well as knowledge
8.0	8.0	assignments aimed at affective as well as cognitive learning

CO-ED CLASSES

7.3	7.8	co-educational classes
-----	-----	------------------------

Items Not Rated Extremely Important

6.8	6.9	use of language appropriate to the cultural characteristics of the adolescents rather than technical jargon
1.8	1.8	discouragement of all nonmarital sexual activity
5.6	5.7	advocacy of sexual activity consistent with the individual's religious and familial background
5.4	5.5	lectures by the teacher
5.3	5.5	experts as speakers
5.4	5.6	class discussions with the parents of the adolescents
6.9	6.8	small class discussions led by student "peer counselors"
6.9	7.0	experimental objectives (measurable goals for the course)
6.4	6.4	behavioral objectives (measurable goals for the course)
6.2	6.3	appropriate textbooks
5.2	5.8	nonacademic reading list that deals with sexuality (e.g., My Secret Garden)
4.8	4.8	separate discussion groups, all male or all female, when the course is co-educational
2.3	2.7	all female or all male classes

PART 4: PROGRAM CHARACTERISTICS

Items Rated Extremely Important

MEAN MEAN

#1 #2

		COURSE CREDIT
7.3	7.4	full academic credit for courses
		INTEGRATION OF MATERIAL INTO OTHER CLASSES
8.7	8.6	incorporation of sex education into primary schooling (K-12)
		SPECIAL PROVISIONS
7.7	7.7	special provisions for disadvantaged participants (e.g., deaf and handicapped students)
7.8	7.5	availability of individual counseling
		TIME AND PLACE
7.9	7.7	convenient time for programs
7.5	7.2	instruction on the school grounds during school hours
		INVOLVEMENT OF DIFFERENT GROUPS
7.5	7.8	involvement of the parents and community in the initial development of the program
7.7	7.7	involvement of professional experts in the initial development of the program
7.5	7.7	involvement of the students in the initial development of the program
8.2	8.3	continued participation of the students in the program
		EVALUATION AND DEVELOPMENT
8.2	8.2	continued evaluation and development of the program
		TRUST BY ADMINISTRATION AND COMMUNITY
7.8	8.1	trust in the teacher by administration and community
7.2	7.9	continued rapport among the sex education teachers, administrators, and community

Items Not Rated Extremely Important

6.3	5.9	coverage of sex related topics in the school newspaper
6.9	6.4	availability of teen rap sessions after school
5.7	5.3	provision of contraceptives
7.2	6.9	classes for the students' parents which complement the students' classes
5.5	5.8	confidentiality of participation in the sex education program
5.1	4.5	instruction on the school grounds after school hours
5.7	4.4	convenient location off the school grounds
6.1	6.5	concentration of sex education topics in a specific sex education class
6.5	6.3	dispersion of sex education topics in different classes (e.g., health, biology, social studies, etc.)

6.7 6.7

continued participation of the parents and community in
the program

6.8 6.7

continued participation of the professional experts in the
program

TABLE 4-3: OUTCOMES OF PROGRAMS WITH MEAN RATING FOR EACH CRITERION

PART 1: KNOWLEDGE

Items Rated Extremely Important***

MEAN MEAN

#1* #2**

		PHYSICAL DEVELOPMENT AND HUMAN REPRODUCTION
6.9	7.5	greater understanding of physical changes during adolescence and development differences between the sexes
7.5	7.3	greater understanding of human reproduction
		SOCIAL AND SEXUAL ASPECTS OF ADOLESCENTS
7.5	7.7	greater understanding of the emotional and social needs and changes during adolescence
7.1	7.3	greater understanding of the importance of love and commitment in sexual relationships
8.2	8.0	greater understanding of sexual exploitation among adolescents
		SEXUAL ACTIVITY
7.9	7.8	greater understanding of the emotional and social aspects of sexual intercourse
7.1	7.4	greater understanding of the nonbiological aspects of sexual intercourse
7.4	7.2	greater understanding of alternatives to sexual intercourse (e.g., masturbation, oral sex, etc.)
		BIRTH CONTROL
8.3	8.0	greater understanding of where to obtain birth control
8.1	8.0	greater understanding of advantages and disadvantages of alternative methods of birth control
8.5	8.2	greater understanding of the effectiveness of birth control methods
8.3	8.2	greater understanding of the effective use of different birth control methods
		PROBABILITY OF BECOMING PREGNANT
8.5	7.8	greater understanding of the probability of becoming pregnant
8.4	8.0	greater understanding of the need for contraception
		ADOLESCENT MARRIAGE AND PARENTHOOD
8.2	7.7	greater understanding of the problems of adolescent marriage and parenthood

* This is the mean rating on the importance of reducing pregnancy.

** This is the mean rating on the importance of facilitating a positive and fulfilling sexuality.

*** These items received a rating of "8" or "9" on a 1 to 9 scale by a majority of the sex educational professionals surveyed.

		VENEREAL DISEASE
6.1	7.6	greater understanding of venereal disease
		MYTHS
7.2	7.9	greater understanding of common myths about sexuality
<u>Items Not Rated Extremely Important****</u>		
7.1	7.1	greater understanding of dating, necking, and petting
6.7	7.0	greater understanding of human sexual response
6.1	6.0	greater understanding of methods of satisfying one's sexual partner
5.8	5.9	greater understanding of sexual techniques of arousal and their value
7.4	7.3	greater understanding of sex role behaviors
6.7	6.8	greater understanding of the effects of drugs and alcohol on sexual behavior and sexual responses
4.8	6.1	greater understanding of the relationship between sex and aging
6.4	6.6	greater understanding of exploitation of sexuality by media
5.3	5.7	greater understanding of pornography and its role in affecting sexual expectations
5.2	5.6	greater understanding of problems of overpopulation
6.8	6.7	greater understanding of sources of help for sexual problems
7.0	6.6	greater understanding of practical and ethical considerations regarding abortion
6.8	6.2	greater understanding of laws pertaining to abortion
6.9	6.4	greater understanding of where to obtain abortions
7.2	7.2	greater understanding of anatomy and physiology
6.0	5.9	greater understanding of laws pertaining to birth control methods

**** These items did not receive a rating of 8 or 9 on a 1 to 9 scale by a majority of the sex education professionals surveyed.

PART 2: CHANGES IN UNDERSTANDING OF SELF

Items Rated Extremely Important

MEAN MEAN
#1 #2

8.2	8.5	VALUES AND GOALS
		greater understanding of one's own values and the values of others
7.8	7.4	greater understanding of long-range life goals (e.g., children, or careers)
		NEEDS
8.6	8.5	greater understanding of one's own emotional needs
		SKILL AND BEHAVIOR
8.3	7.9	greater understanding of one's own interpersonal skills and behavior
		SEXUAL RESPONSE
7.6	7.6	greater understanding of one's sexual response

PART 3: CHANGES IN VALUES

Items Rated Extremely Important

MEAN MEAN

#1 #2

8.8	8.8	PERSONAL RESPONSIBILITY greater understanding of one's responsibility for his/her own behavior
6.4	7.8	BODY VARIATIONS greater acceptance of others' body variations (e.g., beauty, penis and breast size, etc.)
7.3	8.1	greater acceptance of one's own body variations
7.2	7.8	SEX ROLES greater acceptance of variations in filling sex roles
8.0	7.9	greater ability to formulate one's own sex role standards
7.6	7.7	greater ability to question sex role behavior expectations
7.8	8.0	SEX GUILT reduction of sexual guilt
7.9	8.0	greater acceptance of one's level of sexual activity (from abstinence to intercourse)
7.8	7.5	SEXUAL PRESSURE greater opposition to the use of subtle pressure in sexual activity
7.4	7.6	greater opposition to the use of physical force in sexual activity
8.0	7.8	BIRTH CONTROL greater acceptance of birth control
7.3	7.0	ALTERNATIVES TO INTERCOURSE greater acceptance of alternatives to sexual intercourse (e.g., masturbation, oral sex, etc.)
6.3	7.6	SEXUAL LIFE STYLES greater acceptance of alternative life styles for others
7.1	7.7	greater understanding of the range of normal sexual behavior

Items Not Rated Extremely Important

6.4	6.6	greater acceptance of various methods of satisfying one's sexual partner
5.8	6.9	greater acceptance of alternative life styles for self (e.g., homosexuality, monogamy, etc.)

PART 4: CHANGES IN SELF-ESTEEM

Items Rated Extremely Important

MEAN MEAN

#1 #2

8.6 8.5 GENERAL
greater general self-esteem

7.6 7.4 SOCIAL
reduction of fear of rejection by peers

7.9 8.5 SEXUAL
greater sexual self-esteem

PART 5: CHANGES IN INTERACTION SKILLS

Items Rated Extremely Important

MEAN MEAN
#1 #2

		DECISION MAKING
8.5	8.4	greater ability to engage in rational decision making on one's own
8.5	8.2	greater confidence in one's own decisions
7.9	7.8	greater ability to engage in joint decision making
		GENERAL COMMUNICATION
7.9	7.5	greater ability to express oneself on a personal level
7.2	7.5	greater ability to listen
8.0	8.1	greater ability to directly and clearly communicate feelings, both verbally and nonverbally
		DISCUSSION OF SEXUAL NEEDS
8.5	8.5	greater ability to discuss sexual behavior with one's potential or actual sexual partner
7.4	7.6	greater ability to communicate one's own sexual needs
		DISCUSSION OF SEX
7.1	7.1	greater ability to discuss sexual issues with peers
		SEXUAL ASSERTIVENESS
8.4	8.1	greater ability to assert oneself when refusing to participate in sexual activities
		BIRTH CONTROL ASSERTIVENESS
8.6	8.3	greater ability to assert oneself when insisting on the use of birth control
		CARING
7.1	7.8	greater ability to care about and be supportive of others
7.7	7.9	greater acceptance of concern and responsibility for others
		CONFLICT RESOLUTION
7.5	7.6	greater ability to resolve interpersonal conflicts with peers, parents, and others

Items Not Rated Extremely Important

6.8	6.6	greater ability to physically communicate without sexual overtones
6.5	6.7	greater ability to discuss sexual issues with parents
6.6	6.7	greater ability to discuss sexual issues with sex educators, planned parenthood counselors, etc.
4.4	4.9	greater ability to discuss sexual issues with religious leaders

6.0 6.4

greater ability to inform parents about need for physical
affection

PART 6: CHANGES IN FEAR OF SEX-RELATED ACTIVITIES

Items Rated Extremely Important

MEAN MEAN

#1 #2

7.3	7.9	HETEROSEXUAL INTERACTION reduction of fear of interacting with members of the opposite sex
7.1	7.5	SEXUAL ENJOYMENT greater acceptance of the enjoyment of sexual activity
8.0	8.3	greater understanding of the positive role of sexuality in one's life
6.9	7.1	SEXUAL EXPERIMENTATION greater comfort with sexual experimentation consistent with one's own sexual values
7.4	7.7	DISCUSSION OF SEXUAL PROBLEMS greater comfort in seeking advice or help for sexual problems
6.5	7.3	greater comfort with sexual language
7.5	7.8	greater comfort in discussing sexual issues with peers
8.0	8.1	USE OF BIRTH CONTROL greater comfort in asking for and getting information about contraception
8.1	7.9	greater comfort in buying or obtaining contraception
7.8	7.9	greater comfort in using contraception
6.0	7.5	VD TREATMENT reduction of fear of tests for venereal disease
7.2	7.6	GYNECOLOGICAL EXAMS reduction of fear of gynecological exams
7.1	8.2	BODY FUNCTIONS greater comfort with one's own bodily functions (e.g., menstruation)

Items Not Rated Extremely Important

6.8	6.4	reduction of fear that parents will discover one's use of birth control
6.5	6.6	reduction of fear of initiating sexual activity

CHAPTER 5

QUESTIONNAIRES FOR MEASURING IMPORTANT FEATURES AND OUTCOMES OF PROGRAMS

Introduction

Chapter 3 concluded that questionnaires are the best method of obtaining information about features and outcomes. Chapter 4 identified specific features and outcomes of programs that are believed to be important and should be measured. This chapter provides and discusses six questionnaires for measuring those features and outcomes. In addition, this chapter describes the methods used to develop these questionnaires and the quality of the instruments. Although the questionnaires are provided at the end of this chapter, the reader is encouraged to peruse them before reading the remainder of the chapter.

An Overview of the Questionnaires

They have a number of qualities that recommend their use. First, they measure nearly all the features and outcomes of programs identified in the previous chapter as important and they also provide estimates of the probability of pregnancy.

Second, all questions are divided among six questionnaires which can be used independently of one another. Moreover, one of the questionnaires contains numerous scales, some of which can be excluded if desired. This modularization is important for four reasons: 1) it enables different questionnaires to be given on successive occasions; 2) it allows those evaluators who are interested in only selected features or outcomes to in fact measure only those selected features or outcomes; 3) it enables those evaluators who find some questionnaires too sensitive or too controversial for a particular class or community to exclude those questionnaires without affecting the use of the remaining measures; and 4) it facilitates their use in different settings.

A third feature which facilitates their use is the breadth of the audience for which they are designed. The vocabulary, concepts, and instructions are selected or designed so that all the questionnaires can be given to all adolescents of junior high age or older.

Fourth, the questionnaires have been designed to maximize their reliability and validity. They have been pretested by different groups throughout the country, and their reliability and validity coefficients range from acceptable to excellent.

Fifth, all features and outcomes that are inherently dichotomous are measured by dichotomous questions, and all features and outcomes that are inherently continuous are measured by either scales or frequencies.

Sixth, little methodological expertise is needed to administer and analyze the answers. All answers can be directly and easily coded numerically by either coders or keypunchers (if computers are to be used). Alternatively, all questionnaires can be scored by hand.

Finally, these questionnaires can be used both to develop and to evaluate single sex education classes and entire programs for adolescents. They can also be used in both experiments and surveys.

Despite these useful properties, the questionnaires must rely upon the self-reports of adolescents who may intentionally provide misleading information. Moreover, they are not perfected instruments. They undoubtedly need further refinement in general and perhaps modification for particular sub-populations. If users wish to change parts of the questionnaires, we will discuss with them our rationale for different features of the questionnaire design and the advisability of proposed changes.

In the following sections of this chapter, various aspects of the questionnaires are discussed more thoroughly.

Uses of the Questionnaires

In their present form these questionnaires can serve two major purposes: 1) to better plan sex education classes or programs and 2) to better evaluate classes or programs. If additional questions are added to them, they can enhance research on sexuality.

The most important function of these questionnaires is evaluation. This can be done both informally and formally. On the other hand, teachers can administer a few questionnaires to a few students, casually read the answers, and then decide to buttress a particular part of the class. On the other hand, an outside research team can conduct pretests and several posttests with both experimental and control groups and then statistically analyze the data. In other words, they can use all the procedures discussed in the preceding chapters.

The hundreds of questions can also serve as guidelines for planning purposes. The features and outcomes identified as important in Chapter 4 can also serve this function, but the questionnaires provide more detailed information. Thus, they can be used to more clearly articulate both features and outcomes. For example, teachers can use the knowledge questions to suggest specific facts or topics for instruction. Alternatively, they can use the indices measuring interaction skills to better develop behavioral objectives.

The Questionnaires

The six questionnaires are briefly summarized in Table 5-1. The first three measure features of programs, and the next three measure outcomes of

programs. Because the different participants in sex education programs (e.g., students, teachers, and principals) have different types of information about the program and different biases, questionnaires are provided for each of them. The questionnaire for each type of participant contains all the questions easily and reliably answered by that participant. Thus, teachers and principals provide information about program and course structure, and students provide information on their knowledge, perceptions, attitudes, and behavior.

The questionnaires are discussed in order, but the social and sexual behavior inventory, discussed last, is one of the more important. It measures the behavioral consequences of programs.

Class Evaluation for Students

Content of Questions

The student class evaluation contains three main parts: 1) items describing the teacher, 2) items describing qualities of the class as it relates to the other students, and 3) items describing the quality of the classroom as it relates to the responding students. These items measure all the teacher and classroom characteristics rated important by the experts.

The main difference between the second and third parts is the referent. For example, in the second part is the item, "In my class it is easy for students to ask questions," whereas in the third part is the item, "In my class it is easy for me to ask questions." Obviously, these two parts contain some redundancy, but pretests indicated that both parts are necessary. The second part is needed to overcome the idiosyncracies of particular students. For example, many normally quiet students may indicate that they do not talk frequently in class, but they and others may indicate that students do talk frequently in class. On the other hand, the third part is needed to validate some of the perceptions of the students. For example, students may indicate that it is easy for other students to ask questions, but not easy for themselves to ask questions. If all students respond in this same way, then the perceptions of the students about the ease with which other students can ask questions are incorrect or they are talking more than they realize.

Form of Questions

All the items are five point Likert items using the following scale:

- 1 not at all true of . . . (your teacher, your class, you)
- 2 slightly true of (your teacher, your class, you)
- 3 somewhat true of (your teacher, your class, you)
- 4 mostly true of (your teacher, your class, you)
- 5 completely true of . . . (your teacher, your class, you)

Likert items are included instead of other types of items for several reasons. First, Likert items are extremely popular. Thus, both students and teachers are likely to be familiar with them. Second, if the items are properly written, they have a high content validity. Third, they provide data that are at least ordinal, and that are sometimes analyzed as interval data. Finally,

Table 5-1: The Contents of the Questionnaires

I. Questionnaires for Measuring the Features of Programs

1. Class Evaluation (For Students)
 - teacher characteristics
 - class characteristics
 - personal characteristics
2. Class Evaluation (For Teachers)
 - program characteristics
 - class characteristics
 - coverage of topics and activities
 - teacher characteristics
3. Class Evaluation (For Principals)
 - program characteristics
 - teacher characteristics

II. Questionnaires for Measuring the Outcomes of Programs

1. Knowledge Test (For Students)
 - physical development and human reproduction
 - social and sexual aspects of adolescence
 - sexual activity
 - birth control
 - probability of becoming pregnant
 - adolescent marriage and parenthood
 - venereal disease
2. Psychological Inventory (For Students)
 - Part 1: Understanding of Self
 - goals
 - sexual response
 - Part 2: Values
 - personal responsibility
 - body variations
 - sex roles
 - sexual guilt
 - sexual pressure
 - birth control
 - alternatives to intercourse
 - sexual life styles
 - Part 3: Self-esteem
 - general self-esteem
 - social self-esteem
 - Part 4: Interaction Skills
 - decision-making
 - general communication

- communication of sexual needs
- discussion of sex
- sexual assertiveness
- birth control assertiveness
- caring

Part 5: Fear or Comfort with Sex Related Activities

- heterosexual interaction
- sexual enjoyment
- sexual experimentation
- discussion of sexual problems
- use of birth control
- VD treatment
- gynecological exams
- body functions

3. Social and Sexual Behavior Inventory (For Students)

- nonsexual social activities
- discussion of sexual matters
- sexual activities
- use of contraceptives
- probability of becoming pregnant

they facilitate index construction.

The items have five categories, because five categories is approximately the optimal number of categories for these topics and respondents. If fewer than five categories are used, then information is probably unnecessarily lost. If many more than five categories are used, then 1) students are more likely to become frustrated by trying to be precise, and 2) there is an appearance of precision that in fact does not exist.

Since the 1960's, when student evaluations became more common, their validity has been frequently questioned and evaluated. The literature suggests that students cannot validly evaluate teachers or classes. However, there is a crucial difference between those course evaluations and these questionnaires. Those course evaluations of the 1960's and 1970's used the students to estimate the teacher's true teaching effectiveness. In contrast, these questionnaires ask the students to describe their individual feelings in the classroom, the feelings of their classmates, and their perceptions of the teacher. For these types of affective questions, the students are the best experts, for they, better than observers, know their own feelings and perceptions. For example, questions ask the extent to which "It is easy for me to ask questions" and the extent to which "I am encouraged to do what I feel is right." These questions can best be answered by students. Similarly, another question asks the extent to which the teacher "Shows warmth towards students." Once again, it is the perception that is important. If a teacher is actually warm, but most students perceive the teacher as cold, it is the perception of coldness that will have the effect upon the students.

Class Evaluation for Teachers

Content of Questions

The second questionnaire is the teacher's. It provides information about the program and course structure, the extent to which numerous topics are covered in the course, the use of different types of activities in the classroom, the teacher's preparation for the course, and the development and evaluation of the course.

Form of Questions

Many of the important features of the course and program are inherently dichotomous (e.g., Is your course offered during school hours?") Such features are measured with a simple yes/no format.

Especially important dichotomous questions which may not be answered carefully or reliably are followed by a request for examples. These examples cannot be analyzed statistically, but they are included for two reasons:

1) pretests indicated that the requests for examples caused the teachers to answer the entire question more carefully, and 2) the examples may provide useful information to evaluators familiar with the examples.

Because the coverage of specific topics is considered so important to particular outcomes, all important topics are specified in the questionnaire, and the teacher is asked 1) to rate each topic on a 1 to 5 scale according to

how it is covered in class, and 2) to specify the amount of time in minutes or hours spent on that topic. The 1 to 5 scale does not have intervals that appear to be equal. Thus, those data should be treated as ordinal, not interval. On the other hand, the amount of time spent is ratio data. Many other questions use the same 1 to 5 Likert format found in the students' questionnaire and discussed above.

Class Evaluation for Principals

Content of Questions

The third questionnaire is for school principals. It covers program characteristics, the development of the program, and the relationship between the teacher and both the administration and community. Because many of the questions are also included in the teachers' questionnaire, the principals' questionnaire is the least important, nevertheless, it does provide the only information on the extent to which the teacher has the trust and rapport of the administration and community. Of course, it also provides information that can be used to validate similar data from the teachers' questionnaires.

Format of Questions

The format of the questions is identical to those used in the teachers' questionnaires and described above. Dichotomous variables are asked with yes/no questions, and the remaining questions are Likert five point items.

Knowledge Test for Students

Content of Questions

The first questionnaire designed to measure the outcomes of programs is the knowledge test. It contains seven separate multiple-choice tests that can provide separate and overall estimates of the students' knowledge. (See Table 5-6.) These tests cover all knowledge outcomes rated as very important. They include emotional and social aspects of sexual behavior, sexual behavior itself, contraception, the probability of becoming pregnant, adolescent marriage and parenthood, and venereal disease.

Form of the Questions

All the knowledge questions use the multiple-choice format. Most questions have four or five possible responses, although a few have three or six.

The reason for selecting this format is that all alternatives have distinct disadvantages. Fill-in-the-blank questions have two crucial flaws. First, whether or not some answers are correct can be determined only by experts, and this is costly. Second, many answers may be technically correct, but may not be the desired answer. For example, the question, "Columbus discovered America in ____?", can be answered with "1492" or "the Santa Maria". Sometimes brighter students with more information about the topic are more likely to provide nonstandard but correct answers.

Similarly, true/false questions have become less popular for three reasons. First, it is very difficult to write items which are unambiguously correct or incorrect. When they are unambiguous, they tend to measure more trivial points or to be filled with so many modifiers that the correct answer can be guessed from the wording of the sentence. Second, true/false items can rarely test the student's basic understanding of some topic. Third, by chance alone, the student will guess 50% of the items correctly.

Finally, matching items together has one crucial flaw: the structure greatly limits the types of questions that can be asked. For example, if only one item in the left hand column requires a date, and only one item in the right hand column is a date, then obviously the two can be matched without knowledge of the date. To prevent this, numerous dates must be included and this encourages certain types of items or facts to be oversampled.

Because of these problems with alternative formats, the knowledge questions use a multiple choice format. Their statements do not have to be unambiguously correct, because the best response is chosen. Smaller percentages of questions will be answered correctly by chance or by knowledge gained from the format. All answers can be easily coded as right or wrong. Finally, many different topics can be included in questions.

When using multiple-choice questions, the number of possible choices becomes a variable. Theoretically, a greater number of choices will increase the reliability and decrease the probability of correct guessing. Practically, there are diminishing returns; the difficulty of creating good choices increases; and the cost of the student reading and considering more choices also increases. Thus, four or five choices is considered optimal and most questions have that number of choices.

Psychological Inventory for Students

Content of Items

The second questionnaire measuring the outcomes of programs is the psychological inventory. It contains twenty-seven separate Likert indices measuring a wide variety of psychological attributes (e.g., the students' understanding of themselves, their values, their self-esteem, their interaction skills, and their fears of sex-related activities).

These values, perceptions, skills, etc., are both components of a positive sexuality and causes of reduced pregnancy. For example, if students' self-esteem improves, their skills improve, and their fears diminish, then their sexuality is more positive and fulfilling. Alternatively, if their knowledge about pregnancy and birth control, their self-esteem, and their assertiveness skills improve, and if their fear of contraception diminishes, then they are probably less likely to become pregnant.

Of the fifty psychological outcomes of programs rated as extremely important by the experts, only four outcomes are not adequately covered by these twenty-seven indices. These four include understanding of needs, understanding of skills and behavior, sexual self-esteem, and conflict resolution skills. The first two outcomes proved to be too broad and

encompassing for the scales we created. The latter two outcomes are actually part of social self-esteem and communication skills, for which there are indices. The remaining forty-six psychological outcomes are more fully covered by the scales.

Form of Items

All the items in the psychological inventory are 1 to 5 Likert scales which can be added to form the twenty-seven indices. Likert indices are the most common scaling method in the psychological literature and are used in this questionnaire for several reasons. First, many students and teachers are familiar with Likert scales. Thus, students are not likely to have problems completing items, or if they do have problems, teachers can probably answer any questions correctly. Second, a Likert index is very easy to score. Thus, evaluators who are not methodologically sophisticated can easily use these questionnaires. In many respects, adding up scores on individual items to find the index scores is similar to finding the overall scores on many tests teachers give to their students. Third, because the items are intercorrelated, there exists some evidence for the unidimensionality of the index.

Unfortunately, one of these advantages is also a disadvantage. The fact that all items are weighted equally greatly facilitates the calculation of total scores, but weighting all items equally assumes that all items are in fact equally important, and this assumption cannot be adequately tested. In this particular study, all the items included are based upon roughly equal ratings by the experts, but the experts did not rate the specific items included in the scales.

Other scaling methods were considered, but all alternatives contained more critical flaws. For example, Thurstone scales provide greater evidence for the ordinality of the responses. However, a single Thurstone scale is costly to develop because it requires the creation of hundreds of items and judgments from about a dozen experts. Consequently, it was not feasible to create Thurstone scales for the many outcomes rated important. Moreover, the criteria used by the judges are specific to time and place. In different communities they may be inappropriate and they would need to be updated in a rapidly changing area such as human sexuality.

Similarly, Guttman scales provide better evidence than Likert indices for the ordinality of the data, but for several reasons they were not used. First, they too are difficult if not impossible to create for many of the features and outcomes. The reason for this difficulty is that Guttman scales require a series of steps through which everyone must pass in the same order. Although this may occur theoretically, the structures have not been elucidated in the literature, and they cannot be quickly identified or tested. For example, Kohlberg (c.f. Gilligan 1970) and others directed a great amount of effort to identifying six stages of moral development, but currently even that work is being strongly questioned. Second, Guttman scales are not easily used by unsophisticated methodologists. Third, the scalability of the items may depend upon the subpopulation in question. Thus, they might appear valid in one tested population, but might be invalid elsewhere.

Social and Sexual Behavior Inventory

Content of Questions

The last questionnaire measures important and quantifiable sexual and social behaviors. Specifically, it measures 1) the frequency of various social activities (e.g., dating members of the opposite sex and attending parties), 2) the frequency of discussions of sexual topics with different groups of people, 3) the frequency of various sexual activities (e.g., masturbation, light petting, heavy petting, and intercourse), 4) the frequency with which different types of contraception are used, and 5) the care with which each method of contraception is used. Responses to many of these questions can be combined in a table showing the effectiveness of contraception and can be represented by a number indicating the probability of becoming pregnant.

Because of the importance of sexual intercourse and contraception, questions on these topics are especially detailed. For example, if a girl uses a diaphragm, she is asked whether she uses her own diaphragm or someone else's, whether she's been recently fitted for a diaphragm, whether she keeps it in the vagina for a sufficient length of time, whether she positions it properly, whether she uses spermicidal jelly, etc. These more detailed questions provide more accurate estimates of the care with which contraception is used and of the probability of becoming pregnant.

This last questionnaire obviously asks explicit questions about the students' sexual behavior. Consequently, some teachers or evaluators may choose not to use it. However, other teachers may be able to assure anonymity, to protect the confidentiality of the students, and to feel comfortable using it. For these teachers, this questionnaire can offer a great deal of information about behavioral consequences of programs.

Form of Questions

Most of the questions in the behavioral inventory measure the frequency of various activities. One group of questions requests simple frequencies (e.g., "Write the number of times that you or your sex partner used each type of birth control method during the last month.")

A second group of questions utilizes a new and promising format. Questions have the form, "How often do you . . .?" and the respondent is asked to express the answer by placing the correct number in any of the following lines:

- _____ times per day
- _____ times per week
- _____ times per month
- _____ times per year
- _____ never

This is not a common format for questionnaires. However, we pretested it and found that after providing directions and several examples, adolescents could easily use it. Moreover, it has several advantages that do not characterize

other forms. First, it allows the student to choose that response which is most appropriate. For example, consider the question, "How often do you normally engage in light petting?" Some sexually active students will naturally think in terms of so many times per week. Other students who rarely engage in petting will more naturally think in terms of a couple of times per year. With this format, each student can choose the line which is most natural or comfortable. Second, this format reduces the effects of social desirability. For example, if the question were asked differently, "How many times per year do you engage in light petting?", very sexually active students might grossly understate the number of times they actually engage in petting. Alternatively, if the question were phrased, "How many times per week do you engage in light petting?", students not sexually active might tend to exaggerate their activity; providing the same choices to all questions probably reduces both the understatements and the overstatements.

Providing a choice of possible answers does have one minor drawback: raw data will not have the same common denominator. That is, some answers will be in times per week, others in times per month, etc. This minor problem can be easily overcome by converting all scores to "times per year" through multiplying by the appropriate numbers (i.e., 365, 52, or 12).

Both this group of questions and the previous group of questions have the advantage that they produce ratio data. Such data are particularly convenient for statistical purposes.

A third group of items has the form, "How often do you . . .?" and then provides the following five point scale:

- 1 never which means about 0% of the time
- 2 sometimes which means about 25% of the time
- 3 half the time which means about 50% of the time
- 4 usually which means about 75% of the time
- 5 always which means about 100% of the time

Although respondents may make errors, the various terms are defined so that they are equally distant apart (i.e., 0%, 25%, 50%, etc.). Thus, these questions can probably be treated as interval without greatly violating any assumptions.

In preliminary versions of this questionnaire, each question was asked in two ways, "How often do you normally . . .?" and "How many times during the previous three months did you . . .?" The pretests clearly indicated that most students estimated the numbers of times they engaged in activities during the last three months by first considering how often they normally engage in the activities. Thus, the latter form of the question provided poorer information and was dropped in most questions.

However, the questions about the numbers of times each form of birth control was used during the last month are used for two reasons. First, the numbers of times each type of contraception was used during the last month are needed to estimate the probability of pregnancy. Second, most students engage in sexual intercourse less frequently than other sexual activities, and can accurately remember the actual number of acts of intercourse with each method

of contraception during the last month.

Estimating the Effectiveness of Contraceptive Use and the Probability of Pregnancy

One major reason that many programs designed to reduce pregnancies fail to assess their impact is the cost and difficulty of measuring subsequent pregnancies. In order for the data to be statistically significant and theoretically meaningful, the pregnancy rates among numerous cases (e.g., students), must be measured for a considerable length of time. This is costly. Moreover, the validity of the data may be jeopardized by 1) students failing to report pregnancies, or 2) students dropping out of programs because of pregnancies and thereby becoming removed from the sample. Consequently, there exists a great need for an alternative method of assessing the impact of programs upon pregnancies.

Hitherto, no one to our knowledge has developed any reasonably valid and accurate method of measuring the care with which each method of contraception is used nor the probability of becoming pregnant. Because of their importance, we have developed a method for measuring both of these.

This method has three significant advantages. First, it is much less costly than tracking many people over time. Second, it gives immediate feedback about the success of programs. Third, it does not assume that all contraceptors have the effectiveness rates of adults throughout the nation, nor that non-contraceptors rely solely upon chance. Instead, it incorporates obtainable information about the amount of sexual intercourse and the care with which contraception is used.

On the other hand, this method has one significant disadvantage--it has not yet been thoroughly tested and validated. Although it is probably more accurate than other methods of estimating the probability of pregnancy, the precision of its estimates should not be exaggerated, and its validity should be carefully examined.

The method has two basic steps. First, it measures how carefully each respondent uses each method of birth control. This care is expressed as the probability of becoming pregnant during each act of intercourse given the reported amount of contraceptive care. Second, each of the probabilities is multiplied by the number of times each respondent uses each form of birth control. The sum of these products is the overall probability of becoming pregnant.

Estimating the Effectiveness of Contraceptive Use

The questionnaire includes detailed questions on all the important behaviors in using each method of birth control. Ideally, answers to these questions could simply be summed or averaged in some manner. However, some of the behaviors are more important than others, and some behaviors are important only if other behaviors are or are not done. That is, there are interaction effects among the questions. Because of these complexities, users must sum

the answers to specific sets of questions, and then use these sums and the tables provided to find the estimated probability of pregnancy. Although this may sound difficult, there are never more than two steps for each method of contraception and the steps can be easily completed. The exact steps and the tables are provided in Volume III which is the questionnaire and scoring kit.

Ideally, the probabilities provided in the tables would have been verified in the literature. However, to our knowledge, no one has determined the probability of becoming pregnant for each of the different ways in which people use birth control. Thus, the probabilities provided are informed estimates, but they should be verified empirically.

When creating these estimates, the book, Contraceptive Technology 1978-1979 by Robert Hatcher, et al. was particularly helpful, because it presents both theoretical and actual use rates for all the types of contraception we covered. Thus, that data provided various boundaries. However, the utility of those rates is limited by the fact that they are based upon the probability of becoming pregnant during an entire year, not upon the probability of becoming pregnant during each act of intercourse.

Two additional comments should be made about the errors in the probabilities provided. First, there is no reason to believe that they are all biased in the same direction. Thus, some errors may cancel other errors. Second, if there are systematic errors, they should affect both the pretests and the posttests equally. Thus, these methods can probably be safely used in evaluating programs.

Estimating the Probability of Pregnancy

Given the probability of becoming pregnant for each act of intercourse, the overall probability of becoming pregnant can be found by 1) simply multiplying the frequency with which each method is used times the probability of pregnancy for each act and 2) summing these products. James Trussel (1979) used simulation techniques to predict actual data and showed that the probability of becoming pregnant each month is linearly related to the number of acts of intercourse and is also linearly related to the effectiveness of each method. Thus, there is empirical evidence for the validity of completing these two steps.

In sum, this method of estimating pregnancies is superior to previous methods, because it incorporates obtainable information about the amount of sexual intercourse and the effectiveness of contraceptive use. Its rationale is that some information is better than no information, even when simplifying assumptions must be made. Despite the improvements of this method, the precision of its estimates should not be exaggerated, its assumptions should be scrutinized, and the entries in its tables improved.

Development of Questionnaires

This section describes the procedures used to develop and evaluate the questionnaires. Because the problems involved in measuring the features of programs differ from those involved in measuring the outcomes of programs,

different procedures were used in developing the two groups of questionnaires. They are discussed separately below.

Questionnaires for Measuring Features of Programs

Review of existing questionnaires The first step was a review of the existing questionnaires measuring features of sex education programs. When evaluating their own classes, many teachers ask their students about the students' perceptions of their class, but none of the questionnaires available in the literature proved particularly helpful. There were several reasons for this. First, the existing questionnaires did not cover the features specified as important by the experts. For example, none of them asked questions about 1) different aspects of the classroom atmosphere such as trust, warmth, and concern, 2) the coverage of important topics in class discussions, or 3) program features such as special provisions for the disadvantaged students. Second, none of them included separate sections or questions for students, teachers, and principals. Finally, few of them used language and concepts appropriate for adolescents. Consequently, we developed completely new questionnaires for measuring features of programs.

Generation of Questions When creating the first draft of the questionnaire we first decided which of the three groups of people (students, teachers, or principals) could provide the most accurate information about each of the important features, and we then created a question for each feature. In general, this was a rather straightforward process, because many questions dealt with objective matters (e.g., academic credit for courses, co-ed classes, special provisions for disadvantaged students, coverage of topics).

Local Review by Experts A number of adolescents both completed the questionnaire and examined it for clarity. We discussed each question with the adolescent and modified any question that had led to differing interpretations. The questionnaire was also given to several sex education professionals who made further suggestions which were incorporated.

Local Test To further ascertain the validity and check for administrative problems, the three questionnaires were given to the students, teacher, and principal of a local school. Prior to observing the results from the questionnaires, we independently observed the sex education classes and completed the questionnaires as if we were students. We also discussed the classes at length with the teacher. The convergence of our evaluations with the evaluations of the students, teacher, and principal strongly indicated that the questionnaires are valid.

Summary of the Validity In sum, the validity of these questionnaires is demonstrated in two ways. First, they have a high content validity. That is, both adolescents and professionals have a common understanding of the meaning of the questions. Second, in a field test, they produced the same results as those produced by two outside observers.

Questionnaires for Measuring Outcomes of Programs

Review of existing questionnaires and measures Because the experts rated

numerous knowledge outcomes, psychological outcomes, and behavioral outcomes as important, we completed several steps to find the best existing measures of these outcomes. First, we contacted both sex educators and psychologists familiar with either questionnaires or measures, and sought their suggestions. Second, we reviewed the bibliographies of recent empirical studies of sex education and looked for references to questionnaires or measures. Third, we carefully explored the major collections of psychological measures, or references to psychological measures (i.e., Buros (1974), Chun (1975), Goldman (1978), and Thorndike (1971)).

Although a great many questionnaires or measures have been used by either sex educators or psychologists, they proved inadequate for our purposes. In general, there were four major reasons.

First, most existing questionnaires did not measure many of the outcomes rated as important by the experts. For example, they did not measure knowledge about the probability of becoming pregnant, the clarity of one's goals, nor fears of different sexual activities.

Second, many of them tried to measure far too many outcomes with too few questions. For example, one prominent questionnaire purports to measure both knowledge and attitudes with only twenty questions.

Third, many of the questionnaires were designed for college or medical students and contained language that was too difficult for adolescents. The true/false question, "In responsive women, noncoital stimulation tends to produce a more intensive physiological orgasmic response than does coitus" is typical of some questionnaires. Others contained more common sexual language, but nevertheless, used words with which junior high school students are unfamiliar.

Fourth, the quality of many questionnaires was not evaluated. Typically, the steps completed in developing the questionnaires were not described and estimates of the measures' reliability or validity were not presented.

Although the majority of the questionnaires do not meet the canons of scientific rigor, there do exist a number of good to excellent questionnaires measuring knowledge and self-esteem. These were carefully examined.

Five knowledge questionnaires were particularly good: The Sexual Knowledge Survey (Algier, 1978), The Sex Information Questionnaire (Clark & Hicks, 1969), The Sex Knowledge and Attitude Test (Lief & Reed, 1972), The Sexual and Contraceptive Knowledge Questionnaire (Miller, 1977), and The Sex Attitude and Knowledge Survey (Petersen, et al., 1978). Thus, they provided a few items which were modified and incorporated into our questionnaire. However, none of them in their existing state measured the exact knowledge outcomes rated important with the desired format and with vocabulary appropriate for young adolescents.

Because self-esteem is a prominent concept in psychology, self-esteem is better measured than any of the other outcomes of programs. We seriously considered twelve different measures reviewed by Wylie (1961) and five other scales (The Alter Self-Esteem Measure, Alter 1978; The Coopersmith Self-Esteem

Inventory, 1967; The Rogers Self Concept Scale, 1954; The Rosenberg Self-Esteem, 1965; The Tennessee Self Concept Scale, 1965; and The Texas Social Behavior Inventory, 1974). Despite the recognized quality of these scales, they were not used for two reasons. First, they contained language that was too difficult. Second, they tended to be unidimensional, but recent research (Alter, 1978) indicates that self-esteem is a multi-dimensional phenomenon. For example, an adolescent may consider himself physically and socially attractive, but sexually incompetent. Consequently, we reworded some of the items in the Rosenberg Self-Esteem Scale and others, and included them in measures of general self-esteem, social self-esteem, sexual self-esteem, and body self-esteem.

The existing knowledge and self-esteem measures were clearly the most developed and best evaluated. For all the remaining outcomes of programs (e.g., values, understanding of self, interaction skills, fears of sex-related activities, and social and sexual behaviors), there were virtually no useable measures. At times, there were promising leads, but these never proved profitable. For example, Mosher (1968) has developed a guilt inventory. However, it did not address the particular types of guilt rated important by the experts. Similarly, the Kinsey Institute for Sex Research and other organizations have developed questions about sexual behaviors, but they did not specifically address many behaviors crucial in estimating the probability of pregnancy (e.g., questions about the care with which contraception is used). Thus, most of the items in the psychological inventory and the social and sexual inventory are completely new.

Generation of Items In the generation of items, the list of important outcomes provided a rather detailed guide. For each outcome, between five and ten items were created. Thus, the first drafts of the questionnaires measuring outcomes contained more than five hundred items.

Although a few knowledge questions were suggested by questions in other questionnaires, the majority are original. Many are based upon discussions in respected sex education and adolescent psychology texts (e.g., McCary, Kathadorian, Delora & Warren, Muuss, and Lefrancois).

Similarly the vast majority of the psychological items were guided by the list of outcomes and based upon brain storming. A few were suggested by other measures or consultants.

The list of important outcomes provided less guidance for the social and sexual behavior inventory, because the items on the list were less detailed. For example, the list included a couple of items about the proper use of contraception, but many questions were needed to accurately assess the care with which contraception is used. Thus, many of these questions are based upon a review of the proper usage of each form of contraception.

Mathtech Test All of the initial questionnaires were given to Mathtech personnel and a few of their adolescent children. This preliminary test produced numerous clarifications, revisions, etc.

Local Review by Experts Two psychologists trained in questionnaire design and scale construction examined each item for clarity,

unidimensionality, and comprehensibility. Similarly, two groups of adolescents, serving as consultants, studied the questionnaire. These groups contained both whites and blacks and individuals from different grade levels. Their comments caused some items to be reworded and others to be eliminated.

National Test As we developed these tests, numerous teachers and sex education professionals contacted us and requested copies of the tests so that they could administer them to their own students. Because these pretests could further reveal any problems with the tests or their directions, we sent literally thousands of questionnaires to different people throughout the nation. Some of the teachers returned the questionnaires so that we could provide them with statistical results, and others did not. Although no group of adolescents completed all the parts of the questionnaires, the returned questionnaires provided very useful data that was statistically analyzed.

The statistical analysis was based upon 80 to 110 cases. The number of cases varies because some parts of some questionnaires were completed by more adolescents than other parts. The sample is a diversified sample. It includes people from different parts of the country, adolescents of different ages, both blacks and whites, people with both rich and poor backgrounds, and adolescents with varying amounts of sex education. Although the sample is heterogeneous, it is definitely not a random sample, and its limitations should be recognized. Nevertheless, it provides useful data.

The data in different questionnaires were analyzed differently. For the knowledge questions, we examined primarily the distribution of answers for each question. We then excluded questions that were either too easy or too difficult. Similarly, we replaced a few multiple-choice responses if they were never chosen by the adolescents and were not needed for other reasons. We also examined the understanding of questions by analyzing the distributions. For example, if many students gave the same wrong answer, we checked whether the question was vague or unfair. As a result of this analysis, about twenty percent of the questions was eliminated.

The statistical analysis of the items in the psychological inventory was more elaborate. It included two major steps.

First, we correlated all the items with the Marlowe-Crowne Social-Desirability Scale and excluded from further consideration all items with correlation coefficients greater than .30. This reduces greatly the possible error caused by response sets based upon social desirability.

Second, we factor analyzed all the psychological items that were not correlated with the social desirability scale. We factor analyzed the items in groups ranging from 49 items to 121 items. There were two reasons for grouping items: 1) there were too many items to include in any factor analysis program, and 2) different groups of cases had completed different groups of items and thus correlations between some pairs of items could not be obtained.

The first factor analyses of the groups of items were orthogonal. Typically, each factor analysis produced several factors with a prominent content theme in each factor. This was most heartening and indicated that the

various measures have a reasonably high validity.

However, the factor analysis was primarily exploratory, not confirmatory. That is, the goal at this stage of development was to develop the best possible factors or measures, not to confirm them. Thus, we modified the factors in the following ways. First, we focused upon each of the factors one at a time, and removed from the subsequent analyses those items with the wrong theoretical content. This is reasonable because the large number of items and the relatively small number of cases caused some items to load rather highly on factors simply because of chance. Second, we removed items with the lowest factor loadings and replicated the factor analysis. That is, we studied both the content and factor loadings of different combinations of items and selected those combinations with the best content and highest loadings. It is these factor loadings that are reported in Table 5-7. Third, we added some items to factors which were weak, but which represented important outcomes of programs. In a few cases, the addition of items did not produce a strong factor, and that measure was dropped. In a few other cases, the addition of items produced a strong factor which was kept.

The importance of the factor analysis of the psychological items should be fully realized. As a result of the factor analysis, more than two hundred items were dropped from consideration. Moreover, the factor analysis produced a large number of rather orthogonal factors which form the basis for grouping many of the items on the list of important outcomes.

The data were also used to modify the social and sexual behavior inventory. Responses and students' comments suggested a variety of different clarifications and changes. They also demonstrated that students can remember the number of acts of sexual intercourse during the previous month, but if they are sexually active, their estimates for longer amounts of time contain significantly greater error.

Reliability and Validity of the Questionnaires Measuring Outcomes

Four different types of evidence suggest these questionnaires are reasonably valid. First, they have been extensively pretested and most problems have been overcome. Second, most questions are asked in a straight-forward manner. Third, the factor loadings of the psychological measures range from acceptable to excellent. These are reported in Table 5-7. Fourth, response sets are reduced by excluding all questions correlated with the Marlowe-Crowne Social-Desirability Scale, and by including roughly equal numbers of positive and negative items.

If questionnaires are valid, then they must necessarily be reliable. However, inter-item reliability coefficients (Cronbach's alpha) are also provided in Table 5-8 for all the psychological measures. These coefficients should be viewed with caution for several reasons. First they are somewhat redundant (if the factor loadings are high, then the inter-item reliability coefficients must also be high). Because factor loadings were used to select items in factors, the reliability coefficients cannot be intolerably low. Second, the reliability of the measures as tested is lower than the reliability of the final scales which contain refinements. Third, the inter-item reliability coefficients are a function of the unidimensionality of

the measure. Although unidimensionality is a desired characteristic of many of the scales, it is not necessary in others. For example, the measure for acceptance of alternative life styles intentionally includes different life styles which will not evoke consistent attitudes. That is, because it is intentionally multidimensional, it will appear to be unreliable, when in fact it may be reliable.

Conclusion

The chapter has discussed six different questionnaires, containing 34 different measures plus many additional questions measuring important features and outcomes. It also provides questions and methods for assessing the care with which contraception is used and the probability of pregnancy. Developing and evaluating these questionnaires has been an enormous task.

These questionnaires have been carefully discussed with adolescents and pretested in many different subpopulations. Moreover, the data provided by various teachers suggest that the questionnaires are reliable and valid.

However, these questionnaires are still in their developmental stages. The statistical analyses were more exploratory than confirmatory. Thus, the questionnaires need to be further refined and their reliability and validity verified.

Table 5-6: The Seven Scales of the Knowledge Test

PHYSICAL DEVELOPMENT AND REPRODUCTION

9. The parts of the body to nearly reach full size first are:
- a. the genitals (penis, vagina, etc.)
 - b. head
 - c. hands and feet
 - d. all of the above
 - e. b & c
10. Physical changes in teenage boys include:
- a. body has "baby fat" for awhile and then becomes slimmer
 - b. penis becomes larger
 - c. sperm is produced (made)
 - d. voice becomes lower
 - e. all of the above
 - f. a, b, and c
12. When it comes to physical maturity:
- a. girls usually mature about 4 years earlier than boys
 - b. girls usually mature about 2 years earlier than boys
 - c. boys and girls mature at the same age
 - d. boys usually mature about 1 year earlier than girls
14. Which of the following statements is true?
- a. If a boy has nocturnal emissions (wet dreams) it means he has a sexual illness.
 - b. A girl should not participate in sports when she has her period.
 - c. Menstruation (having a period) and nocturnal emissions (wet dreams) are a normal and healthy part of growing up.
 - d. all of the above
 - e. none of the above
36. Which of the following statements is true?
- a. Boys begin puberty (become men) at different ages.
 - b. Menstruation is the normal monthly release of blood.
 - c. A baby is the result of an ovum (egg) having been fertilized by a sperm.
 - d. Boys usually cannot urinate (piss) and climax (come) at the same time.
 - e. all of the above
 - f. b and c

42. Puberty changes:

- a. happen all at once
- b. happen over several years for both sexes
- c. happen quickly for girls and slowly for boys
- d. happen quickly for boys and slowly for girls

50. The ability of men and women to reproduce (become a mother or father) is mostly the result of:

- a. hormonal changes
- b. increased sexual activity
- c. emotional changes
- d. none of the above

53. In general, women:

- a. are shorter than men
- b. reach their maximum height before men do
- c. have more fatty parts in their bodies than men do
- d. all of the above
- e. a and b

55. Which of the following statements is true?

- a. Usually one egg a month is released from an ovary.
- b. Testes produce one sperm for each ejaculation (climax).
- c. Millions of eggs each month are released from any ovary.
- d. Testes produce millions of sperm for each ejaculation (climax).
- e. b and c
- f. a and d

SOCIAL AND SEXUAL ASPECTS OF ADOLESCENCE

2. In this country teenage boys who refuse to have sexual intercourse:
- a. may lose a girlfriend
 - b. may get a reputation as "queer" or "gay"
 - c. may get respect from some peers
 - d. all of the above
 - e. none of the above
7. During their teen years, people become more interested in sexual activities because:
- a. their sex hormones are changing
 - b. society expects them to be more interested
 - c. they spend more time with people away from their parents
 - d. all of the above
11. If two people want to have a close relationship, it's important that they:
- a. trust each other
 - b. are open with each other
 - c. feel good about themselves
 - d. all of the above
 - e. a and c
23. For most teenagers, their emotional needs:
- a. are pretty stable
 - b. seem to change all the time
 - c. are confusing for them
 - d. b and c
24. Most teenagers
- a. need to be accepted by people in their own age group
 - b. do not feel a need to belong to a group
 - c. conform to their social group's norms
 - d. all of the above
 - e. a and c
32. A teenage girl who refuses to have sexual intercourse:
- a. may lose a boyfriend
 - b. may gain the respect of her boyfriend
 - c. may get a reputation as frigid
 - d. all of the above
 - e. none of the above

33. If a girl chooses to have sexual intercourse, she may:

- a. become pregnant
- b. feel guilt
- c. become more close to her boyfriend
- d. become less close to her boyfriend
- e. all of the above
- f. a and c

SEXUAL ACTIVITY

4. Someone who masturbates (plays with oneself sexually) often:
- a. will lower his/her sex drive
 - b. will become insane
 - c. will learn more about his/her sexual response
 - d. all of the above
 - e. none of the above
17. It's always harmful for a woman to have sexual intercourse when she:
- a. is pregnant
 - b. is menstruating
 - c. has a cold
 - d. a and b
 - e. none of the above
18. Physical feelings during climaxing (coming) are decreased:
- a. by drinking a lot of alcohol
 - b. after sterilization
 - c. by being tired
 - d. all of the above
 - e. a and c
27. The most likely way to pick up germs through sexual activity is from:
- a. kissing
 - b. oral sex
 - c. sexual intercourse with a woman who is menstruating
29. A large penis
- a. is necessary for a woman's physical, sexual enjoyment
 - b. means a man will be more sexually active
 - c. increases more in size when erect than a small penis
 - d. all of the above
 - e. none of the above
45. Masturbation (playing with oneself sexually)
- a. is something many males and females do
 - b. is something only males do
 - c. is something only females do
 - d. is something only a few males and females do

BIRTH CONTROL

3. When having sexual intercourse, it's good to use both contraceptive foam (birth control foam) and condoms (rubbers) because
- a. the man and the woman are sharing the responsibility for avoiding pregnancy
 - b. the woman is less likely to become pregnant than if only one of these is used
 - c. they can both be purchased at the drug store without prescriptions
 - d. all of the above
 - e. a and c
13. Contraceptive (birth control) foam is most effective for repeated acts of sexual intercourse
- a. if a single application is used
 - b. if an additional application is used before each act of sexual intercourse
 - c. if a woman takes a bath in between each act of sexual intercourse
 - d. all of the above
 - e. b and c
21. It's good to use a condom when having sexual intercourse because:
- a. if used right, it usually prevents getting or giving gonorrhea
 - b. it can be bought in a drug store by both boys and girls
 - c. it does not have dangerous side affects
 - d. all of the above
22. To use a condom the right way, a person must:
- a. leave some space at the tip for the ejaculate (come)
 - b. use one every time sexual intercourse occurs
 - c. hold it on the penis while withdrawing from the vagina
 - d. all of the above
26. If used the right way, which of the following birth control techniques prevents pregnancy, 95% or more?
- a. condoms with foam
 - b. diaphragm
 - c. withdrawal (pulling out)
 - d. the pill
 - e. all of the above
 - f. a, b and d

31. Birth control foam should be inserted inside the vagina:
- a. right before intercourse
 - b. 2-4 hours before intercourse
 - c. right after intercourse
 - d. any time before or after intercourse
34. The rhythm method (not having sexual intercourse during fertile days of the month) can be a problem because:
- a. couples can't have intercourse anytime they want
 - b. the woman has to keep a record of her menstrual cycle
 - c. it doesn't always work
 - d. it physically changes the woman
 - e. all of the above
 - f. a, b and c
35. The IUD can work for:
- a. women who have had children
 - b. women with menstrual cramping
 - c. teenagers
 - d. all of the above
 - e. a and b
 - f. none of the above
48. The following birth control methods can be obtained through Planned Parenthood
- a. diaphragm
 - b. condoms (rubbers)
 - c. the pill
 - d. IUD
 - e. a and b
 - f. all of the above
49. It is against the law for doctors:
- a. to give minors (people under 18 or 21) birth control even if parents give permission
 - b. to give minors birth control without parent's permission
 - c. all of the above
 - d. none of the above
52. The diaphragm should be used:
- a. without any cream or jelly
 - b. with any type of lubricant
 - c. with spermicidal jelly
 - d. either with or without spermicidal jelly

PROBABILITY OF BECOMING PREGNANT

1. A woman can get pregnant:
 - a. a few minutes after sexual intercourse
 - b. a few hours after sexual intercourse
 - c. a few days after sexual intercourse
 - d. all of the above
 - e. a and b
5. A woman can become pregnant
 - a. the first time she has sexual intercourse
 - b. if she has sexual intercourse when she has her menstrual period
 - c. if she has sexual intercourse standing up
 - d. all of the above
 - e. a and c
19. The number of females between the ages 15 and 19 becoming pregnant each year is:
 - a. 1 out of every 10
 - b. 1 out of every 25
 - c. 1 out of every 50
 - d. 1 out of every 100
30. It is possible for a teenage woman to get pregnant
 - a. any time she has sexual intercourse
 - b. even if she doesn't have sexual intercourse, but the male climaxes (comes) next to the opening of the vagina
 - c. the first time she has sexual intercourse
 - d. all of the above
 - e. none of the above
38. A woman with early or late periods is most likely to become pregnant if she has sexual intercourse:
 - a. 2 weeks before menstruation begins
 - b. 1 week before menstruation begins
 - c. 1 week after menstruation begins
 - d. 2 weeks after menstruation begins
44. Suppose a normal woman has sexual intercourse just once. She does not use any type of birth control and does not know when she last had a period. How likely would it be for her to get pregnant?
 - a. 1 in 25
 - b. 1 in 100
 - c. 1 in 500
 - d. 1 in 1,000

46. Which of the following statements is true?

- a. It is impossible to become pregnant if the man withdraws (pulls out) before ejaculating (coming).
- b. Douching (washing out the vagina with water) after intercourse decreases the chances of becoming pregnant.
- c. A couple must climax (come) at the same time if pregnancy is to occur.
- d. all of the above
- e. none of the above

47. The likelihood of a typical American girl becoming pregnant before she turns 20 is:

- a. 1 out of 3
- b. 1 out of 11
- c. 1 out of 43
- d. 1 out of 90

54. The ability of a man to make a woman pregnant:

- a. is on a monthly basis similar to the female's cycle
- b. is generally the same at all times of the month and year
- c. decreases dramatically after the age of forty
- d. b and c

ADOLESCENT MARRIAGE AND PARENTHOOD

8. In general, children born to teenage parents:
- a. have problems because their parents aren't mature enough
 - b. are more likely than others to be physically abused
 - c. have the same experiences as any other children
 - d. are more likely than others to be neglected
 - e. all of the above
 - f. a, b and d
15. Reasons given by teenagers for getting married during high school include:
- a. getting away from parents
 - b. avoiding having an illegitimate child
 - c. wanting to begin living an "adult" life
 - d. unhappiness with their present social life
 - e. a, b and d
 - f. all of the above
20. A teenager who marries:
- a. is less likely than other teenagers to succeed in the working world
 - b. is more likely than other teenagers to succeed in the working world
 - c. has an equal chance to succeed in the working world
25. Most girls who have children while still in high school:
- a. continue and finish high school
 - b. quit high school
 - c. quit school but finish later on
28. Pressures of being a teenage parent commonly include:
- a. finding time to do school work
 - b. child care arrangements
 - c. household responsibilities
 - d. financial responsibilities
 - e. all of the above
 - f. b and d

43. Marriage and parenthood present few problems for most teenagers:

- a. who love each other
- b. who can live with their parents
- c. who have few career aspirations
- d. who are mature for their age
- e. all of the above
- f. none of the above

51. Married teenagers:

- a. miss important experiences in growing up
- b. avoid pressure from friends and family
- c. still fit in easily with their old friends
- d. all of the above
- e. none of the above

VENEREAL DISEASE

6. A person can usually avoid getting or giving gonorrhea by:
- a. not having sexual intercourse
 - b. using condoms (rubbers)
 - c. using the pill
 - d. all of the above
 - e. a and b
16. Treatment for venereal disease is available to teenagers in all states in:
- a. physician's offices
 - b. community health clinics
 - c. Planned Parenthood clinics
 - d. hospitals
 - e. all of the above
 - f. a and c
37. It is not possible to cure:
- a. syphilis
 - b. gonorrhea
 - c. herpes virus #2
 - d. all of the above
39. The kinds of things that physically happen to a person when they have gonorrhea are seen easily in:
- a. women
 - b. men
 - c. both men and women equally
40. Syphilis can cause:
- a. insanity
 - b. death
 - c. blindness in the unborn children of the pregnant mother
 - d. all of the above
41. Teenagers sometimes avoid medical care for VD because:
- a. they do not recognize symptoms
 - b. they are afraid of doctors
 - c. they have to report all of their sexual contacts
 - d. all of the above
 - e. a and b

Table 5-7: Scale Items with Factor Loadings

Part: 1 Understanding of Self

Goals: Clarity of Personal Long Term Goals

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
58	.77	I know what I want out of life.
118	.74	I have a pretty clear picture of what I'd like to be doing ten years from now.
29	-.67	Whenever I think about the future, I feel confused.
70	-.54	I would never be able to say what my long-range life goals are.
133	.45	I don't know exactly what I'll be doing in the future, but I do have a general idea of where I'm headed.

Sexual Response: Understanding of Personal Sexual Response

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
11	.78	I've finally reached the point where I feel I have a good understanding of my own sexual feelings and reactions.
69	-.69	I feel I do not know much about my own sexual response.
121	-.69	I don't really know what turns me on sexually.
22	.69	I'm pretty tuned-in to what turns me on sexually.
15	-.57	I am confused about my own sexual arousal.
127	.53	I feel I'm beginning to really understand how I respond physically in different sexual situations.

Part 2: Values

Personal Responsibility: Acceptance of Responsibility for Personal Behavior

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
5	-.62	I feel I am responsible for everything I do, both good and bad.
94	-.62	I'm the only one who can be responsible for my own behavior.
18	.58	Some people make me do all sorts of things that I know are wrong.
92	.50	My behavior as a man or woman is significantly influenced by what I see in movies and magazines.
7	.49	I think that if you get into the wrong crowd, you can't be responsible for what you might do.

Body Variations: Attitude Toward Body Variations

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
24	.78	I can not accept people if their bodies don't meet my requirements.
12	-.65	Breast size or penis size makes little difference to me.
46	.57	I think large breasts or a large penis are important to be sexually attractive.
120	-.57	I think it is mean to make fun of a woman because of the size of her breasts.
4	.42	I think if a guy doesn't look like a "macho" man, he is going to be a loser with women.
43	-.42	I think physical beauty is <u>not</u> the most important part of a sexual relationship.

Sex Roles: Attitude Toward Various Sex Role Behaviors

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
26	.66	I disagree with requiring men and women to behave in a certain way.
61	.61	It bothers me when people expect me to behave in a certain way just because I am a man or woman.
32	.57	Just because women and men acted one way in the past does not mean they should act the same way today.
38	.50	I question whether a man or woman has to behave in a particular way.
40	-.48	When men and women behave the same way, problems occur.

Sexual Guilt: Guilt About Sexual Activity

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
140	.77	I don't want to like sex.
124	.68	I feel I'm going to be punished if I get involved sexually.
57	.55	I usually feel guilty after having any kind of sex.
88	.53	Guilt keeps me from being as sexually active as I would like to be.
62	.52	I think people would be happier if sex wasn't important to them.

Sexual Pressure: Attitude Toward the Use of Pressure and Force in Sexual Activity

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
2	-.79	I think if a girl is a tease she deserves to be forced to engage in sexual activity.
21	-.70	I think people should never take "no" as an answer when they want to have sex with a person.
19	.65	I think it is too bad that some men believe they have to force a girl into bed.
137	.62	I'm proud that I never pressure anyone into sex.
86	.62	I think it is wrong to trick someone into getting involved sexually.
23	.57	I wish other people were as much against pressuring someone into sexual activity as I am.

Birth Control: Attitude Toward the Morality of Birth Control

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
39	.63	There is no good reason for someone to be sexually active without using some type of birth control.
128	-.59	I feel I'm going to be punished if I use birth control.
122	.57	I think any sexually active person should use some form of birth control.
27	-.46	I think birth control methods, such as the pill and IUD are morally wrong.
10	.40	I believe people who use birth control show that they are responsible.

Alternatives to Intercourse: Attitudes Toward Alternatives to Sexual Intercourse

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
51	.75	I think oral sex is perverted.
83	-.65	I think it's good to be open to such things as oral sex, hand stimulation, etc.
56	.61	I think sexual intercourse is the only sexual activity that is satisfying.
136	.60	Even if oral sex felt good, I would feel too uncomfortable to enjoy it.
112	-.59	I think sexual activities like hand stimulation and oral sex are pleasurable ways to enjoy sex and not worry about getting pregnant.
8	-.54	Sometimes I would rather have oral sex or hand stimulation than sexual intercourse.

Sexual Life Styles: Attitude Toward Various Sexual Life Styles

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
37	-.88	I think a man and a woman should live together only if they are married.
105	.54	I think it's up to individuals to decide how much sexual activity is good for them.
65	.53	I think people differ a lot in what gives them the most sexual pleasure.
41	.44	I think people should have the freedom to choose the life-style that is best for them.
100	.39	I think marriage is not for everyone.
13	.37	I think a homosexual has the right to a happy and productive life.

Part 3: Self-esteem

General Self-esteem: General Self-concept

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
48	.78	I feel good about the way I look.
82	.77	On the whole, I am satisfied with myself.
59	.72	I feel that I'm a person of worth, at least equal to others.
66	-.70	All in all, I think I'm a failure.
71	-.67	I feel I do not have much to be proud of.
68	.64	I feel that I have a number of good qualities.

Social Self-esteem: Self-concept in Social Relationships

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
98	.73	I think I am fun to be with.
116	.71	I think I am an important person to my friends.
130	.64	I believe that I am easy to like.
110	.63	I think I have warm relationships with other people.
81	.48	It is easy for me to make friends.

Part 4: Interaction Skills

Decision-making: Ability to Make Decisions

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
36	.72	I feel good about making my own decisions.
93	.69	I can make my own decisions.
33	.62	When it's necessary to make a decision on my own, I do so.
139	.58	I think other people feel I'm sure of my decisions.
42	-.40	I never make a decision without asking someone else what they think.

General Communication: Ability to Communicate Openly

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
64	.67	I usually feel better after I have had a chance to talk through a problem.
17	.63	When I don't quite understand what someone is trying to tell me I try to have them explain the point.
72	.59	It's easier for people to treat me right if I let them really know me.
52	.58	I feel closer to someone after talking about personal things.
25	.50	I listen thoughtfully when a friend is talking to me rather than just give advice.
47	.49	My best relationships are with people with whom I've discussed my feelings.

Communication of Sexual Needs: Ability to Discuss Sexual Needs with a Date

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
125	.83	Even if I am embarrassed, I make sure my sex partner knows what I want.
80	.79	The best way I get my sexual needs met is by telling my partner about them.
53	.74	I am able to let a date know what my sexual needs are.
113	.68	I make it my responsibility to discuss sex with a possible sex partner.
67	.67	I think my partner should appreciate how easily we discuss sex.
103	.64	I don't have trouble letting a date know how far I will go sexually.

Discussion of Sex: Ability to Discuss Sex with Others

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
60	.87	I usually participate in discussions of sex.
49	.67	I like to talk about sex with people my own age.
30	.63	I feel good about discussing sex with people my own age.
102	.62	I occasionally bring up the subject of sex with friends.
28	.57	I find group discussions of sex a good way to understand my own and other people's opinions.

5

Sexual Assertiveness: Ability to be Sexually Assertive

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
107	.75	I have difficulty saying "no" to a sexual advance.
78	.69	I usually go along with what my date wants to do sexually just to avoid a hassle.
95	.68	I'll go along with what we are doing sexually, even if it doesn't feel so great.
87	.67	I'd rather do what my date wants sexually than what want.
101	.50	I don't usually get what I want sexually because I can't put it into words.

Birth Control Assertiveness: Ability to be Assertive in Using Some Form of Birth Control

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
14	.68	I would make it a rule <u>not</u> to have sexual intercourse unless one of us was using birth control.
135	.63	I would make it my business to use some sort of birth control whenever I had sexual intercourse.
131	-.62	If my date refused to use birth control I would have sexual intercourse anyway.
114	-.62	I would have sexual intercourse without using birth control if my date pushed me to.
109	.42	I would usually insist on using the birth control method that I feel comfortable with.

Caring: Ability to Feel and Express Concern for Others

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
35	.71	I enjoy helping someone out.
79	.71	I like knowing that I don't try to make other people unhappy.
1	.59	I try to consider my date's feelings.
54	.59	I think my friends feel they can count on me when they're in trouble.
90	.47	I let others know that I care for them when they come to me with problems.
96	-.45	When someone has a problem, I stay away from them.

Part 5: Fear or Comfort with Sex Related Activities

Heterosexual Interaction: Comfort in Interacting with Members of the Opposite Sex

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
77	.78	I feel comfortable with members of the opposite sex.
75	.70	One problem I don't have is a fear of talking with members of the opposite sex.
9	.66	I don't feel nervous around members of the opposite sex.
16	.65	I feel equally comfortable with a group of boys or a group of girls.
50	.56	Being comfortable around members of the opposite sex helps me socially.

Sexual Enjoyment: Enjoyment of Sexual Activity

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
115	.72	I don't like sex very much.
97	-.70	I look forward to being involved sexually.
129	.69	I think sex is just a hassle.
111	-.67	I see sex as being an important part of life.
45	-.61	Sex helps to make me feel good.
76	.57	I can't understand why some people think sex is so important.

Sexual Experimentation: Comfort with Sexual Experimentation Consistent with Personal Values

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
119	.73	For me, trying out different sexual activities is an important part of learning about what I enjoy.
55	.70	I feel lucky that I can enjoy new sexual experiences.
85	.64	I feel free to experiment sexually within limits.
6	-.58	The idea of trying out different sexual activities is totally weird to me.
34	-.46	It doesn't matter what my values are, I just can't get involved with trying out different sexual activities.
106	.44	As long as it is consistent with my values, I'll get involved with "new" sexual activities.

Discussion of Sexual Problems: Comfort in Discussing Sexual Problems and Birth Control with Others

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
89	.75	I'm too embarrassed to ask for advice about sexual problems.
31	.70	Talking about a sexual problem would make me very nervous.
138	-.64	I'm glad I have someone that I can ask questions about birth control.
108	-.62	I don't think I'd ever have to live with a sexual problem for long because asking for advice and help comes naturally to me.
44	-.55	I am glad that there are people with whom I can discuss sexual problems easily.
134	.55	If I had a sexual problem, I wouldn't know who to turn to.

Use of Birth Control: Comfort with Using Some Form of Birth Control

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
84	.83	I think it's too bad that not everyone can be as relaxed about getting birth control as I could be.
123	.83	I could buy condoms (rubbers), birth control foam, or jelly without being nervous about it.
63	.76	If I needed to go to Planned Parenthood or a health clinic for birth control, I would feel comfortable about doing it.
20	.69	I would have no trouble using birth control.
73	-.49	I would feel too uneasy to buy condoms (rubbers) or foam at the drug store.
91	-.47	If I (or my girlfriend) were taking the pill or had an IUD, I'd worry about it a lot.
126	-.46	I might not use birth control because I'd feel too uncomfortable about using it.

VD Treatment: Fear of VD Examinations and Treatment

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
104	.73	If I thought I had VD, the first thing I'd do is see a doctor.
99	.71	I would not feel nervous about getting VD tests because I would know that I am doing the responsible thing.
76	-.56	If I had VD, I suppose I'd get it treated, but I'd be really nervous.
132	-.54	My greatest fear about having VD is having to go to a clinic or doctor for tests.
3	-.47	Going for VD (venereal disease) tests would make me so nervous, I'd put it off as long as possible.
117	.47	I feel that teenagers should realize that there is nothing to be nervous about getting VD (venereal disease) tests.

Gynecological Exams: Fear of Gynecological Exams (For Females Only)

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
150	.94	I'm relaxed about internal examinations of the vagina.
141	.91	I don't mind internal medical examinations of my vagina.
146	.81	I think there is no reason to be afraid of internal examination of the vagina.
145	.80	An internal examination of my vagina is no big deal.
143	-.70	I think internal examinations of the vagina are one of the worst things women (girls) have to go through.
149	-.44	I am afraid of gynecologists (doctors who give internal examinations of the vagina).

Body Functions: Comfort with Sexual Body Functions (For Females Only)

<u>Item Number</u>	<u>Factor Loading</u>	<u>Item</u>
147	.79	When I'm sexually turned on I find my own lubrication (wetness in vagina) embarrassing.
148	.64	I dislike having a menstrual period because it's unpleasant.
144	.63	When I have my period, I'm very self conscious.
142	.56	I do not like the smell of my genitals (vagina, etc.).

Table 5-8: Reliability Coefficients for the Psychological Measures

<u>Reliability Coefficients*</u>	<u>Items</u>
	Understanding of Self
.75	Goals
.81	Sexual Response
	Values
.65	Personal Responsibility
.72	Body Variations
.70	Sex Roles
.76	Sexual Guilt
.81	Sexual Pressure
.56	Birth Control
.79	Alternatives to Intercourse
.62	Sexual Life Styles
	Self-esteem
.77	General Self-esteem
.77	Social Self-esteem
	Interaction Skills
.71	Decision-making
.73	General Communication
.87	Communication of Sexual Needs
.78	Discussion of Sex
.79	Sexual Assertiveness
.69	Birth Control Assertiveness
.73	Caring
	Fear or Comfort with Sex Related Activities
.80	Heterosexual Interaction
.80	Sexual Enjoyment
.74	Sexual Experimentation
.79	Discussion of Sexual Problems
.84	Use of Birth Control
.72	VD Treatment
.91	Gynecological Exams
.74	Body Functions

* Cronbach's Alpha

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APPENDIX: ALL QUESTIONNAIRES

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CLASS EVALUATION

(For Students)

This questionnaire will be completely anonymous (no one will know it is yours), and it will be used for statistical purposes only. Therefore, do NOT put your name anywhere on this questionnaire. DO use a normal pencil or pen so that all questionnaires will look about the same.

Please be sure to answer every question. If you are not sure, then answer as best as you can.

Name of course _____

Teacher's name _____

Your grade in school _____

Below is a list of statements. Please rate each item on a 1-5 scale according to how true the statement is of your teacher.

- 1 — means the statement is not at all true of your teacher
- 2 — means the statement is slightly true of your teacher
- 3 — means the statement is somewhat true of your teacher
- 4 — means the statement is mostly true of your teacher
- 5 — means the statement is completely true of your teacher

MY TEACHER

- 1 2 3 4 5 is genuinely enthusiastic (very excited) about teaching this course
- 1 2 3 4 5 is very comfortable discussing different things about sex
- 1 2 3 4 5 answers questions that might be embarrassing so that students do not feel uncomfortable
- 1 2 3 4 5 understands that some subjects in sex education may be uncomfortable for some students
- 1 2 3 4 5 shows warmth towards students
- 1 2 3 4 5 shows concern for students
- 1 2 3 4 5 shows respect for students
- 1 2 3 4 5 is open with students
- 1 2 3 4 5 has gained the trust of students
- 1 2 3 4 5 gets along well with students
- 1 2 3 4 5 helps make a class atmosphere in which students can talk about their feelings and opinions
- 1 2 3 4 5 does not say students' feelings or opinions are right or wrong
- 1 2 3 4 5 accepts that some people have different sexual life styles (e.g., sex outside of marriage and homosexuality)
- 1 2 3 4 5 is a good listener

Below is a list of statements. Please rate each item on a 1-5 scale according to how true the statement is of your class.

1 — means the statement is not at all true of your class

2 — means the statement is slightly true of your class

3 — means the statement is somewhat true of your class

4 — means the statement is mostly true of your class

5 — means the statement is completely true of your class

IN MY CLASS

1 2 3 4 5 it is easy for students to ask questions

1 2 3 4 5 students can talk comfortably about sex

1 2 3 4 5 students can comfortably ask questions about birth control (e.g., where to get contraceptives, how to use them, etc.)

1 2 3 4 5 we can talk about any questions or thoughts students have about sex

1 2 3 4 5 students talk frequently

1 2 3 4 5 students feel warmth, concern, and respect for other students

1 2 3 4 5 student opinions are kept confidential (are not spread outside the classroom).

1 2 3 4 5 it is OK for students to have different values or opinions

1 2 3 4 5 students are encouraged to do what they feel is right

1 2 3 4 5 students are encouraged to use birth control if they are sexually active

Below is a list of statements. Please rate each item on a 1-5 scale according to how true the statement is of you.

1 — means the statement is not at all true of you

2 — means the statement is slightly true of you

3 — means the statement is somewhat true of you

4 — means the statement is mostly true of you

5 — means the statement is completely true of you

IN MY CLASS

1 2 3 4 5 it is easy for me to ask questions

1 2 3 4 5 I can talk comfortably about sex

1 2 3 4 5 I can comfortably ask questions about birth control (e.g., where to get contraceptives, how to use them, etc.)

1 2 3 4 5 we can talk about any questions or thoughts I have about sex

1 2 3 4 5 I talk frequently

1 2 3 4 5 I feel warmth, concern, and respect for other students

1 2 3 4 5 other students feel warmth, concern, and respect for me

1 2 3 4 5 my opinions are kept confidential (are not spread outside the classroom)

1 2 3 4 5 it is OK for me to have different values or opinions

1 2 3 4 5 I am encouraged to do what I feel is right

CLASS EVALUATION

(For Teachers)

This questionnaire should be completed for each course or section being evaluated. If several sections of the same course are taught similarly, then one questionnaire should be completed for each of them.

Course title (and section, if any) _____

Your name _____

How many students are in your class? _____

How many females? _____

How many males? _____

What is the duration of the class: _____

Minutes each period? _____

Number of sessions weekly? _____

Number of weeks? _____

	Yes	No
Do students get academic credit for the course?	_____	_____

Is the course offered during school hours?	_____	_____
--	-------	-------

Is the course offered on the school grounds?	_____	_____
--	-------	-------

Is individual counseling available to the students?	_____	_____
---	-------	-------

Are there special provisions for disabled participants (e.g. deaf, blind, and paraplegic students)?	_____	_____
---	-------	-------

If yes, what? _____

Have you taken courses or workshops relevant to human sexuality?	_____	_____
--	-------	-------

If yes, how many times during the last two years?	_____	_____
---	-------	-------

Do you read books about research in human sexuality?	_____	_____
--	-------	-------

If yes, how many have you read in the past year?	_____	_____
--	-------	-------

Following is a list of topics that may be included in a sex education, family life, or human development class. Please check the category that best represents how each topic is covered and estimate the actual number of minutes spent on each topic in your class. More than one category may be checked.

- 1 Not at all: The topic is not discussed at all.
- 2 Questions: The topic is discussed only when students ask questions about it.
- 3 Discussions: The topic is woven into class discussions or activities but is not treated for a full class period.
- 4 Class: The topic is discussed or treated in activities for one full class.
- 5 Unit: The topic is discussed or treated in activities for more than one full class.

Actual time: This is the estimated time, in minutes, spent on the subject during the length of the course.

	(1) Not at all	(2) Ques- tions	(3) Discus- sions	(4) Class	(5) Unit	Time: Minutes
<u>Physiology</u>						
Anatomy and physiology (including physical changes during adolescence)	_____	_____	_____	_____	_____	_____
Biological aspects of human reproduction	_____	_____	_____	_____	_____	_____
Probability of becoming pregnant	_____	_____	_____	_____	_____	_____
Process of pregnancy and childbirth	_____	_____	_____	_____	_____	_____
Normal body variations	_____	_____	_____	_____	_____	_____
<u>Sex Related Activities</u>						
Dating, necking and petting	_____	_____	_____	_____	_____	_____
Emotional and social aspects of sexual intercourse	_____	_____	_____	_____	_____	_____

	(1) Not at all	(2) Ques- tions	(3) Discus- sions	(4) Class	(5) Unit	Time: Minutes
Role of love and commitment in sexual activity	—	—	—	—	—	—
Human sexuality as an aspect of total personality	—	—	—	—	—	—
Relationship between one's self-image and one's sexual behavior	—	—	—	—	—	—
Emotional and social needs and changes during adolescence	—	—	—	—	—	—
Advantages and disadvantages of premarital sexual activity	—	—	—	—	—	—
Social consequences of adolescent pregnancy and marriage	—	—	—	—	—	—
Economic consequences of adolescent pregnancy	—	—	—	—	—	—
Students' experiences, attitudes, and feelings about sexual activity	—	—	—	—	—	—
Range of normal sexual behavior	—	—	—	—	—	—
Various sexual lifestyles (e.g., marriage, serial monogamy, open marriage, and homosexuality)	—	—	—	—	—	—
Homosexuality	—	—	—	—	—	—
Masturbation	—	—	—	—	—	—
Rape	—	—	—	—	—	—
Abortion	—	—	—	—	—	—
Sources of help for sexual problems	—	—	—	—	—	—

	(1) Not at all	(2) Ques- tions	(3) Discus- sions	(4) Class	(5) Unit	Time: Minutes
<u>VD</u>						
Venereal disease or sexually transmitted disease	_____	_____	_____	_____	_____	_____
<u>Myths</u>						
Common myths (e.g., penis size determines pleasure or masturbation causes mental illness)	_____	_____	_____	_____	_____	_____
<u>Values</u>						
Individual student values	_____	_____	_____	_____	_____	_____
Long-range life goals (e.g., children and careers)	_____	_____	_____	_____	_____	_____
Students' experiences, attitudes, and feelings about sexual activity	_____	_____	_____	_____	_____	_____
Students' experiences, attitudes, and feelings about sex roles	_____	_____	_____	_____	_____	_____
<u>Pressure, Exploitation, and Assertiveness</u>						
Peer pressure	_____	_____	_____	_____	_____	_____
Sexual exploitation among adolescents	_____	_____	_____	_____	_____	_____
Avoiding unwanted pregnancies	_____	_____	_____	_____	_____	_____

	(1) Not at all	(2) Ques- tions	(3) Discus- sions	(4) Class	(5) Unit	Time: Minutes
<u>Contraception</u>						
Family planning	_____	_____	_____	_____	_____	_____
Advantages and disadvantages of each contraceptive method	_____	_____	_____	_____	_____	_____
Fears and fallacies about each contraceptive method	_____	_____	_____	_____	_____	_____
Effective use of different birth control methods	_____	_____	_____	_____	_____	_____
Sources of sex-related information and of contraception (e.g., specific family planning clinics)	_____	_____	_____	_____	_____	_____
<u>Skills</u>						
Appropriate concern and responsibility for other people	_____	_____	_____	_____	_____	_____
Decision-making and problem- solving techniques	_____	_____	_____	_____	_____	_____
How to care about and be supportive of others	_____	_____	_____	_____	_____	_____
How to improve communication skills with peers, parents, and others	_____	_____	_____	_____	_____	_____
How to resolve interpersonal conflicts with peers, parents, and others	_____	_____	_____	_____	_____	_____

How often do you include role playing and psycho-drama as a learning tool?

_____ times per class
_____ times per course
_____ never

How often do you include films and other materials?

_____ times per class
_____ times per course
_____ never

Do you provide the opportunity for students to examine and handle contraceptives?

Yes No

Do you include class discussions with teenage parents about the experiences and responsibilities of parenting?

Do you incorporate assignments or activities aimed at improving skills (e.g., communication and decision-making skills)?

If yes, please give two examples: _____

If yes, how many hours does the typical student spend on these assignments and activities?

Do you incorporate assignments and activities aimed at improving factual knowledge?

If yes, please give two examples: _____

If yes, how many hours does the typical student spend on these assignments and activities?

Do you incorporate assignments and activities aimed at affective learning (i.e., feelings)?

If yes, please give two examples: _____

If yes, how many hours does the typical student spend on these assignments and activities?

Do you include group exercises to increase trust, sharing of feelings, and sensitivity?

If yes, please give two examples: _____

If yes, how many hours does the typical student spend on these exercises?

Please answer the questions below using the following 5 point scale:

- 1 not at all
- 2 slightly
- 3 somewhat
- 4 mostly
- 5 completely

To what extent were parents involved in the initial development of the program? 1 2 3 4 5

To what extent were professional experts involved in the initial development of the program? 1 2 3 4 5

To what extent was the administration involved in the initial development of the program? 1 2 3 4 5

To what extent were students involved in the initial development of the program? 1 2 3 4 5

To what extent is your course undergoing continual development? 1 2 3 4 5

To what extent are students still participating in the development of the program? 1 2 3 4 5

To what extent is your course evaluated? 1 2 3 4 5

If it is evaluated, how? _____

CLASS EVALUATION

(For Principals)

Name of course _____

Teacher's name _____

Grade level _____

Please answer the following questions without consulting students or teachers. If a number of sections of the same course are being taught by the same teacher, evaluate those sections as one course. If courses are different, offered in different departments, or taught by different teachers, they should be evaluated separately.

	Yes	No
Do students receive full academic credit for the course?	___	___
Are there special provisions for disadvantaged participants (e.g., deaf and handicapped students)?	___	___
Is individual counseling available to the students?	___	___
Is the course offered during school hours?	___	___
Is the course offered on school grounds?	___	___
Is the course co-educational?	___	___

Please answer the questions below using the following 5 point scale.

- 1 not at all
- 2 slightly
- 3 somewhat
- 4 mostly
- 5 completely

To what extent were parents and the community involved in the initial development of the program? 1 2 3 4 5

To what extent were professional experts involved in the initial development of the program? 1 2 3 4 5

To what extent were students involved in the initial development of the program? 1 2 3 4 5

To what extent is the course undergoing continual development? 1 2 3 4 5

To what extent are students still involved in the development of the program? 1 2 3 4 5

To what extent is the course evaluated? 1 2 3 4 5
If it is evaluated, how? _____

To what extent does the teacher have the trust of the administration? 1 2 3 4 5

To what extent does the teacher have the trust of the community? 1 2 3 4 5

To what extent does the teacher have rapport with administrators? 1 2 3 4 5

To what extent does the teacher have rapport with the community? 1 2 3 4 5

To what extent is the teacher knowledgeable about facts, issues, materials, etc., relevant to human sexuality? 1 2 3 4 5

KNOWLEDGE TEST

These questions refer to knowledge about sexuality in the United States. Please answer them by putting an X over the best response on the answer sheet. There is only one correct answer for each question. Please be sure to answer all questions.

1. A woman can get pregnant .
 - a. a few minutes after sexual intercourse
 - b. a few hours after sexual intercourse
 - c. a few days after sexual intercourse
 - d. all of the above
 - e. a & b

2. In this country teenage boys who refuse to have sexual intercourse
 - a. may lose a girl friend
 - b. may get a reputation as "queer" or "gay"
 - c. may get respect from some peers
 - d. all of the above
 - e. none of the above

3. When having sexual intercourse, it's good to use both contraceptive foam (birth control foam) and condoms (rubbers) because
 - a. the man and the woman are sharing the responsibility for avoiding pregnancy
 - b. the woman is less likely to become pregnant than if only one of these is used
 - c. they can both be purchased at the drug store without prescriptions
 - d. all of the above
 - e. a & c

4. Someone who masturbates (plays with oneself sexually) often
 - a. will lower his/her sex drive
 - b. will become insane
 - c. will learn more about his/her sexual response
 - d. all of the above
 - e. none of the above

5. A woman can become pregnant
- a. the first time she has sexual intercourse
 - b. if she has sexual intercourse when she has her menstrual period
 - c. if she has sexual intercourse standing up
 - d. all of the above
 - e. a & c
6. A person can usually avoid getting or giving gonorrhea by
- a. not having sexual intercourse
 - b. using condoms (rubbers)
 - c. using the pill
 - d. all of the above
 - e. a & b
7. During their teenage years people become more interested in sexual activities because
- a. their sex hormones are changing
 - b. society expects them to be more interested
 - c. they spend more time with people away from their parents
 - d. all of the above
8. In general, children born to teenage parents
- a. have problems because their parents aren't mature enough
 - b. are more likely than others to be physically abused
 - c. have the same experiences as any other children
 - d. are more likely than others to be neglected
 - e. all of the above
 - f. a, b & d
9. The parts of the body to nearly reach full size first are
- a. the genitals (penis, vagina, etc.)
 - b. head
 - c. hands and feet
 - d. all of the above
 - e. b & c
10. Physical changes in teenage boys include:
- a. body has "baby fat" for a while and then becomes slimmer
 - b. penis becomes larger
 - c. sperm is produced (made)
 - d. voice becomes lower
 - e. all of the above
 - f. a, b, & c

11. If two people want to have a close relationship, it's important that they
- a. trust each other
 - b. are open with each other
 - c. feel good about themselves
 - d. all of the above
 - e. a & c
12. When it comes to physical maturity
- a. girls usually mature about 4 years earlier than boys
 - b. girls usually mature about 2 years earlier than boys
 - c. boys and girls mature at the same age
 - d. boys usually mature about 1 year earlier than girls
13. Contraceptive (birth control) foam is most effective for repeated acts of sexual intercourse
- a. if a single application is used
 - b. if an additional application is used before each sexual intercourse act
 - c. if a woman takes a bath in between each sexual intercourse act
 - d. all of the above
 - e. b & c
14. Which of the following statements is true?
- a. If a boy has nocturnal emissions (wet dreams) it means he has a sexual illness
 - b. A girl should not participate in sports when she has her period
 - c. Menstruation (having a period) and nocturnal emissions (wet dreams) are a normal and healthy part of growing up
 - d. all of the above
 - e. none of the above
15. Reasons given by teenagers for getting married during high school include
- a. getting away from parents
 - b. avoiding having an illegitimate child
 - c. wanting to begin living an "adult" life
 - d. unhappiness with their present social life
 - e. all of the above
 - f. a, b, & d

16. Treatment for venereal disease is available to teenagers in all states in
- a. physicians' offices
 - b. community health clinics
 - c. Planned Parenthood clinics
 - d. hospitals
 - e. all of the above
 - f. a & c
17. It's always harmful for a woman to have sexual intercourse when she
- a. is pregnant
 - b. is menstruating
 - c. has a cold
 - d. a & b
 - e. none of the above
18. Physical feelings during climaxing (coming) are decreased
- a. by drinking a lot of alcohol
 - b. after sterilization
 - c. by being tired
 - d. all of the above
 - e. a & c
19. The number of females between the ages of 15 and 19 becoming pregnant each year is
- a. 1 out of every 10
 - b. 1 out of every 25
 - c. 1 out of every 50
 - d. 1 out of every 100
20. A teenager who marries
- a. is less likely than other teenagers to succeed in the working world
 - b. is more likely than other teenagers to succeed in the working world
 - c. has an equal chance to succeed in the working world
21. It's good to use a condom when having sexual intercourse because
- a. if used right, it usually prevents getting or giving gonorrhea
 - b. it can be bought in a drug store by both boys and girls
 - c. it does not have dangerous side effects
 - d. all of the above

22. To use a condom the right way, a person must
- a. leave some space at the tip for the ejaculate (come)
 - b. use one every time sexual intercourse occurs
 - c. hold it on the penis while withdrawing from the vagina
 - d. all of the above
23. For most teenagers, their emotional needs
- a. are pretty stable
 - b. seem to change all the time
 - c. are confusing for them
 - d. b & c
24. Most teenagers
- a. need to be accepted by people in their own age group
 - b. do not feel a need to belong to a group
 - c. conform to their social group's norms
 - d. all of the above
 - e. a & c
25. Most girls who have children while still in high school
- a. continue and finish high school
 - b. quit high school
 - c. quit school but finish later on
26. Which of the following birth control techniques prevents pregnancy, 95% or more, if used the right way
- a. condoms with foam
 - b. diaphragm
 - c. withdrawal (pulling out)
 - d. the pill
 - e. all of the above
 - f. a, b, & d
27. The most likely way to pick up germs through sexual activity is from
- a. kissing
 - b. oral sex
 - c. sexual intercourse with a woman who is menstruating

28. Pressures of being a teenage parent commonly include
- a. finding time to do school work
 - b. child care arrangements
 - c. household responsibilities
 - d. financial responsibilities
 - e. all of the above
 - f. b & d
29. A large penis
- a. is necessary for a woman's physical, sexual enjoyment
 - b. means a man will be more sexually active
 - c. increases more in size when erect than a small penis
 - d. all of the above
 - e. none of the above
30. It is possible for a teenage woman to get pregnant
- a. anytime she has sexual intercourse
 - b. even if she doesn't have sexual intercourse, but the male climaxes (comes) next to the opening of the vagina
 - c. the first time she has sexual intercourse
 - d. all of the above
 - e. none of the above
31. Birth control foam should be inserted inside the vagina
- a. right before intercourse
 - b. 2-4 hours before intercourse
 - c. right after intercourse
 - d. anytime before or after intercourse
32. A teenage girl who refuses to have sexual intercourse
- a. may lose a boyfriend
 - b. may gain the respect of her boyfriend
 - c. may get a reputation as frigid
 - d. all of the above
 - e. none of the above
33. If a girl chooses to have sexual intercourse, she may
- a. become pregnant
 - b. feel guilt
 - c. become more close to her boyfriend
 - d. become less close to her boyfriend
 - e. all of the above
 - f. a & c

34. The rhythm method (not having sexual intercourse during fertile days of the month) can be a problem because

- a. couples can't have intercourse any time they want
- b. the woman has to keep a record of her menstrual cycle
- c. it doesn't always work
- d. it changes the woman physically
- e. all of the above
- f. a, b, & c

35. The IUD can work for

- a. women who have had children
- b. women with menstrual cramping
- c. teenagers
- d. all of the above
- e. a & b
- f. none of the above

36. Which of the following statements is true?

- a. Boys begin puberty (become men) at different ages
- b. Menstruation is the normal monthly release of blood
- c. A baby is the result of an ovum (egg) having been fertilized by a sperm
- d. Boys usually cannot urinate (piss) and climax (come) at the same time
- e. all of the above
- f. b & c

37. It is not possible to cure

- a. syphilis
- b. gonorrhea
- c. herpes virus #2
- d. all of the above

38. A woman with early or late periods is most likely to become pregnant if she has sexual intercourse

- a. 2 weeks before menstruation begins
- b. 1 week before menstruation begins
- c. 1 week after menstruation begins
- d. 2 weeks after menstruation begins

39. The kinds of things that happen to a person physically when they have gonorrhea are seen easily in
- a. women
 - b. men
 - c. both men and women equally
40. Syphilis can cause
- a. insanity
 - b. death
 - c. blindness in the unborn children of the pregnant mother
 - d. all of the above
41. Teenagers sometimes avoid medical care for V.D. because
- a. they do not recognize symptoms
 - b. they are afraid of doctors
 - c. they have to report all of their sexual contacts
 - d. all of the above
 - e. a & b
42. Puberty changes
- a. happen all at once
 - b. happen over several years for both sexes
 - c. happen quickly for girls and slowly for boys
 - d. happen quickly for boys and slowly for girls
43. Marriage and parenthood present few problems for most teenagers
- a. who love each other
 - b. who can live with their parents
 - c. who have few career aspirations
 - d. who are mature for their age
 - e. all of the above
 - f. none of the above
44. Suppose a normal woman has sexual intercourse just once. She does not use any type of birth control and does not know when she last had a period. How likely would it be for her to get pregnant?
- a. 1 in 25
 - b. 1 in 100
 - c. 1 in 500
 - d. 1 in 1,000

45. Masturbation (playing with oneself sexually)
- a. is something many males and females do
 - b. is something only males do
 - c. is something only females do
 - d. is something only a few males and females do
46. Which of the following statements is true?
- a. It is impossible to become pregnant if the man withdraws (pulls out) before ejaculating (coming)
 - b. Douching (washing out the vagina with water) after intercourse decreases the chances of becoming pregnant
 - c. A couple must climax (come) at the same time if pregnancy is to occur
 - d. all of the above
 - e. none of the above
47. The likelihood of a typical American girl becoming pregnant before she turns 20 is
- a. 1 out of 3
 - b. 1 out of 11
 - c. 1 out of 43
 - d. 1 out of 90
48. The following birth control methods can be obtained through Planned Parenthood
- a. diaphragm
 - b. condoms (rubbers)
 - c. the pill
 - d. IUD
 - e. all of the above
 - f. a & b
49. It is against the law for doctors
- a. to give minors (people under 18 or 21) birth control even if parents give permission
 - b. to give minors birth control without parents' permission
 - c. all of the above
 - d. none of the above

50. The ability of women and men to reproduce (become a mother or father) is mostly the result of
- a. hormonal changes
 - b. increased sexual activity
 - c. emotional changes
 - d. none of the above
51. Married teenagers
- a. miss important experiences in growing up
 - b. avoid pressure from friends and family
 - c. still fit in easily with their old friends
 - d. all of the above
 - e. none of the above
52. The diaphragm should be used
- a. without cream or jelly
 - b. with any type of lubricant
 - c. with spermicidal jelly
 - d. either with or without jelly
53. In general, women
- a. are shorter than men
 - b. reach their maximum height before men do
 - c. have more fatty parts in their bodies than men do
 - d. all of the above
 - e. a & b
54. The ability of a man to make a woman pregnant
- a. is on a monthly basis similar to the female's cycle
 - b. is generally the same at all times of the month and year
 - c. decreases dramatically after the age of forty
 - d. b & c
55. Which of the following statements is true?
- a. Usually one egg a month is released from an ovary
 - b. Testes produce one sperm for each ejaculation (climax)
 - c. Millions of eggs a month are released from any ovary
 - d. Testes produce millions of sperm for each ejaculation (climax)
 - e. b & c
 - f. a & d

PSYCHOLOGICAL INVENTORY

We prefer that all of these questionnaires be completely anonymous. Therefore, please do NOT write your name anywhere on these materials. Also, please use a normal lead pencil to answer the questions on the answer sheet, so that questionnaires will be the same. These questionnaires will be analyzed statistically. Thus, there will be no information provided about any particular individual.

The items on the following pages are a list of statements. Please rate each item on a 1 to 5 scale according to how true the statement is of you.

1 means the statement is not at all true of you

2 means the statement is slightly true of you

3 means the statement is somewhat true of you

4 means the statement is mostly true of you

5 means the statement is completely true of you

This is NOT a knowledge test. Everyone will have different answers. Your answer is correct if it accurately describes you.

Please be sure to answer every item. If you are not sure, then answer as best as you can. Put an X on the number on the answer sheet indicating your answer.

This questionnaire is designed for many different groups of young people. Some young people especially older ones, have had sexual intercourse. Other young people, especially younger ones, have not had sexual intercourse. Therefore, you should not conclude from the questionnaire that you should or should not have sexual intercourse.

Some of the questions ask about "sex". This includes all kinds of sexual activity (e.g., "playing around", necking, and sexual intercourse).

Some questions ask about your feelings toward birth control. If you now have sexual intercourse, answer these questions according to your present feelings. If you are not having sexual intercourse now, answer the questions according to how you will feel when you begin having sexual intercourse.

Not at all true of me 1	Slightly true of me 2	Somewhat true of me 3	Mostly true of me 4	Completely true of me 5
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1. 1 2 3 4 5 I try to consider my date's feelings.
2. 1 2 3 4 5 I think if a girl is a tease she deserves to be forced to engage in sexual activity.
3. 1 2 3 4 5 Going for VD (venereal disease) tests would make me so nervous, I'd put it off as long as possible.
4. 1 2 3 4 5 I think if a guy doesn't look like a "macho" man, he is going to be a loser with women.
5. 1 2 3 4 5 I feel I am responsible for everything I do, both good and bad.
6. 1 2 3 4 5 The idea of trying out different sexual activities is totally weird to me.
7. 1 2 3 4 5 I think that if you get into the wrong crowd, you can't be responsible for what you might do.
8. 1 2 3 4 5 Sometimes I would rather have oral sex or hand stimulation than sexual intercourse.
9. 1 2 3 4 5 I don't feel nervous around members of the opposite sex.
10. 1 2 3 4 5 I believe people who use birth control show that they are responsible.
11. 1 2 3 4 5 I've finally reached the point where I feel I have a good understanding of my own sexual feelings and reactions.
12. 1 2 3 4 5 Breast size or penis size makes little difference to me.
13. 1 2 3 4 5 I think a homosexual has the right to a happy and productive life.
14. 1 2 3 4 5 I would make it a rule not to have sexual intercourse unless one of us was using birth control.
15. 1 2 3 4 5 I am confused about my own sexual arousal.

Not at all
true of me
1

Slightly
true of me
2

Somewhat
true of me
3

Mostly
true of me
4

Completely
true of me
5

16. 1 2 3 4 5 I feel comfortable whether I'm with a group of boys or girls.
17. 1 2 3 4 5 When I don't quite understand what someone is trying to tell me, I try to have them explain the point.
18. 1 2 3 4 5 Some people make me do all sorts of things that I know are wrong.
19. 1 2 3 4 5 I think it's too bad that some men believe they have to force a girl into bed.
20. 1 2 3 4 5 I would have no trouble using birth control.
21. 1 2 3 4 5 I think people should never take "no" as an answer when they want to have sex with a person.
22. 1 2 3 4 5 I'm pretty tuned-in to what turns me on sexually.
23. 1 2 3 4 5 I wish other people were as much against using pressure in sexual activity as I am.
24. 1 2 3 4 5 I can not accept people if their bodies don't meet my requirements.
25. 1 2 3 4 5 I listen thoughtfully when a friend is talking to me rather than just give advice.
26. 1 2 3 4 5 I disagree with requiring men and women to behave in a certain way.
27. 1 2 3 4 5 I think birth control methods, such as the pill and IUD, are morally wrong.
28. 1 2 3 4 5 I find group discussions of sex a good way to understand my own and other people's opinions.
29. 1 2 3 4 5 Whenever I think about the future, I feel confused.
30. 1 2 3 4 5 I feel good about discussing sex with people my own age.

Not at all true of me 1	Slightly true of me 2	Somewhat true of me 3	Mostly true of me 4	Completely true of me 5
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31. 1 2 3 4 5 Talking about a sexual problem would make me very nervous.
32. 1 2 3 4 5 Just because women and men acted one way in the past does not mean they should act the same way today.
33. 1 2 3 4 5 When it's necessary to make a decision on my own, I do so.
34. 1 2 3 4 5 It doesn't matter what my values are, I just can't get involved with trying out different sexual activities.
35. 1 2 3 4 5 I enjoy helping someone out.
36. 1 2 3 4 5 I feel good about making my own decisions.
37. 1 2 3 4 5 I think a man and a woman should live together only if they are married.
38. 1 2 3 4 5 I question whether men or woman have to behave in a particular way.
39. 1 2 3 4 5 There is no good reason for someone to be sexually active without using some type of birth control.
40. 1 2 3 4 5 When men and women behave the same way, problems occur.
41. 1 2 3 4 5 I think people should have the freedom to choose the life-style that is best for them.
42. 1 2 3 4 5 I never make a decision without asking someone else what they think.
43. 1 2 3 4 5 I think physical beauty is not the most important part of a sexual relationship.
44. 1 2 3 4 5 I am glad that there are people with whom I can discuss sexual problems with easily.
45. 1 2 3 4 5 Sex helps to make me feel good.

Not at all
true of me
1

Slightly
true of me
2

Somewhat
true of me
3

Mostly
true of me
4

Completely
true of me
5

46. 1 2 3 4 5 I think large breasts or a large penis are important to be sexually attractive.
47. 1 2 3 4 5 My best relationships are with people with whom I've discussed my feelings.
48. 1 2 3 4 5 I feel good about the way I look.
49. 1 2 3 4 5 I like to talk about sex with people my own age.
50. 1 2 3 4 5 Being comfortable around members of the opposite sex helps me socially.
51. 1 2 3 4 5 I think oral sex is perverted.
52. 1 2 3 4 5 I feel closer to someone after talking about personal things.
53. 1 2 3 4 5 I am able to let a date know what my sexual needs are.
54. 1 2 3 4 5 I think my friends feel they can count on me when they're in trouble.
55. 1 2 3 4 5 I feel lucky that I can enjoy new sexual experiences.
56. 1 2 3 4 5 I think sexual intercourse is the only sexual activity that is satisfying.
57. 1 2 3 4 5 I usually feel guilty after having any kind of sex.
58. 1 2 3 4 5 I know what I want out of life.
59. 1 2 3 4 5 I feel that I'm a person of worth, at least equal to others.
60. 1 2 3 4 5 I usually participate in discussions of sex.

- | Not at all
true of me
1 | Slightly
true of me
2 | Somewhat
true of me
3 | Mostly
true of me
4 | Completely
true of me
5 |
|-------------------------------|--|-----------------------------|---------------------------|-------------------------------|
| 61. 1 2 3 4 5 | It bothers me when people expect me to behave in a certain way just because I am a man or woman. | | | |
| 62. 1 2 3 4 5 | I think people would be happier if sex wasn't important to them. | | | |
| 63. 1 2 3 4 5 | If I needed to go to Planned Parenthood or a health clinic for birth control, I would feel comfortable about doing it. | | | |
| 64. 1 2 3 4 5 | I usually feel better after I have had a chance to talk through a problem. | | | |
| 65. 1 2 3 4 5 | I think people differ a lot in what gives them the most sexual pleasure. | | | |
| 66. 1 2 3 4 5 | All in all, I think I'm a failure. | | | |
| 67. 1 2 3 4 5 | I think my partner should appreciate how easily we discuss sex. | | | |
| 68. 1 2 3 4 5 | I feel that I have a number of good qualities. | | | |
| 69. 1 2 3 4 5 | I feel I do not know much about my own sexual response. | | | |
| 70. 1 2 3 4 5 | I would never be able to say what my long-range life goals are. | | | |
| 71. 1 2 3 4 5 | I feel I do not have much to be proud of. | | | |
| 72. 1 2 3 4 5 | It's easier for people to treat me right if I let them really know me. | | | |
| 73. 1 2 3 4 5 | I would feel too uneasy to buy condoms (rubbers) or foam at the drug store. | | | |
| 74. 1 2 3 4 5 | I can't understand why some people think sex is so important. | | | |
| 75. 1 2 3 4 5 | One problem I don't have is a fear of talking with members of the opposite sex. | | | |

Not at all true of me 1	Slightly true of me 2	Somewhat true of me 3	Mostly true of me 4	Completely true of me 5
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76. 1 2 3 4 5 If I had VD I suppose I'd get it treated, but I'd be really nervous.
77. 1 2 3 4 5 I feel comfortable with members of the opposite sex.
78. 1 2 3 4 5 I usually go along with what my date wants to do sexually just to avoid a hassle.
79. 1 2 3 4 5 I like knowing that I don't try to make other people unhappy.
80. 1 2 3 4 5 The best way I get my sexual needs met is by telling my partner about them.
81. 1 2 3 4 5 It is easy for me to make friends.
82. 1 2 3 4 5 On the whole, I am satisfied with myself.
83. 1 2 3 4 5 I think it's good to be open to such things as oral sex, hand stimulation, etc..
84. 1 2 3 4 5 I think it's too bad that not everyone can be as relaxed about getting birth control as I could be.
85. 1 2 3 4 5 I feel free to experiment sexually within limits.
86. 1 2 3 4 5 I think it is wrong to trick someone into getting involved sexually.
87. 1 2 3 4 5 I'd rather do what my date wants sexually than what I want.
88. 1 2 3 4 5 Guilt keeps me from being as sexually active as I would like to be.
89. 1 2 3 4 5 I'm too embarrassed to ask for advice about sexual problems.
90. 1 2 3 4 5 I let others know that I care for them when they come to me with problems.

Not at all true of me 1	Slightly true of me 2	Somewhat true of me 3	Mostly true of me 4	Completely true of me 5
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91. 1 2 3 4 5 If I (or my girlfriend) were taking the pill or had an IUD, I'd worry about it a lot.
92. 1 2 3 4 5 My behavior as a man or woman is significantly influenced by what I see in movies and magazines.
93. 1 2 3 4 5 I can make my own decisions.
94. 1 2 3 4 5 I'm the only one who can be responsible for my own behavior.
95. 1 2 3 4 5 I'll go along with what we are doing sexually, even if it doesn't feel so great.
96. 1 2 3 4 5 When someone has a problem I stay away from them.
97. 1 2 3 4 5 I look forward to being involved sexually.
98. 1 2 3 4 5 I think I am fun to be with.
99. 1 2 3 4 5 I would not feel nervous about getting VD tests because I would know that I am doing the responsible thing.
100. 1 2 3 4 5 I think marriage is not for everyone.
101. 1 2 3 4 5 I don't usually get what I want sexually because I can't put it into words.
102. 1 2 3 4 5 I occasionally bring up the subject of sex with friends.
103. 1 2 3 4 5 I don't have trouble letting a date know how far I will go sexually.
104. 1 2 3 4 5 If I thought I had VD, the first thing I'd do is see a doctor.
105. 1 2 3 4 5 I think it's up to individuals to decide how much sexual activity is good for them.

- | Not at all
true of me
1 | Slightly
true of me
2 | Somewhat
true of me
3 | Mostly
true of me
4 | Completely
true of me
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-
106. 1 2 3 4 5 As long as it is consistent with my values, I'll get involved with "new" sexual activities.
107. 1 2 3 4 5 I have difficulty saying "no" to a sexual advance.
108. 1 2 3 4 5 I don't think I'd ever have to live with a sexual problem for long because asking for advice and help comes naturally to me.
109. 1 2 3 4 5 I would usually insist on using the birth control method that I feel comfortable with.
110. 1 2 3 4 5 I think I have warm relationships with other people.
111. 1 2 3 4 5 I see sex as being an important part of life.
112. 1 2 3 4 5 I think sexual activities like hand stimulation and oral sex are pleasurable ways to enjoy sex and not worry about getting pregnant.
113. 1 2 3 4 5 I make it my responsibility to discuss sex with a possible sex partner.
114. 1 2 3 4 5 I would have sexual intercourse without using birth control if my date pushed me to.
115. 1 2 3 4 5 I don't like sex very much.
116. 1 2 3 4 5 I think I am an important person to my friends.
117. 1 2 3 4 5 I feel that teenagers should realize that there is nothing to be nervous about getting VD (venereal disease) tests.
118. 1 2 3 4 5 I have a pretty clear picture of what I'd like to be doing ten years from now.
119. 1 2 3 4 5 For me, trying out different sexual activities is an important part of learning about what I enjoy.
120. 1 2 3 4 5 I think it is mean to make fun of a woman because of the size of her breasts.

Not at all true of me 1	Slightly true of me 2	Somewhat true of me 3	Mostly true of me 4	Completely true of me 5
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121. 1 2 3 4 5 I don't really know what turns me on sexually.
122. 1 2 3 4 5 I think any sexually active person should use some form of birth control.
123. 1 2 3 4 5 I could buy condoms (rubbers), birth control foam or jelly without being nervous about it.
124. 1 2 3 4 5 I feel I'm going to be punished if I get involved sexually.
125. 1 2 3 4 5 Even if I am embarrassed, I make sure my sex partner knows what I want.
126. 1 2 3 4 5 I might not use birth control because I'd feel too uncomfortable about using it.
127. 1 2 3 4 5 I feel I'm beginning to really understand how I respond physically in different sexual situations.
128. 1 2 3 4 5 I feel I'm going to be punished if I use birth control.
129. 1 2 3 4 5 I think sex is just a hassle.
130. 1 2 3 4 5 I believe that I am easy to like.
131. 1 2 3 4 5 If my date refused to use birth control, I would have sexual intercourse anyway.
132. 1 2 3 4 5 My greatest fear about having VD is having to go to a clinic or doctor for tests.
133. 1 2 3 4 5 I don't know exactly what I'll be doing in the future, but I do have a general idea of where I'm headed.
134. 1 2 3 4 5 If I had a sexual problem I wouldn't know who to turn to.
135. 1 2 3 4 5 I would make it my business to use some sort of birth control whenever I had sexual intercourse.

- | Not at all
true of me
1 | Slightly
true of me
2 | Somewhat
true of me
3 | Mostly
true of me
4 | Completely
true of me
5 |
|-------------------------------|---|-----------------------------|---------------------------|-------------------------------|
| 136. 1 2 3 4 5 | Even if oral sex felt good, I would feel too uncomfortable to enjoy it. | | | |
| 137. 1 2 3 4 5 | I'm proud that I never pressure anyone into sex. | | | |
| 138. 1 2 3 4 5 | I'm glad I have someone that I can ask questions about birth control. | | | |
| 139. 1 2 3 4 5 | I think other people feel I'm sure of my decisions. | | | |
| 140. 1 2 3 4 5 | I don't want to like sex. | | | |

The following questions are for girls only.

- | | | | | |
|----------------|---|--|--|--|
| 141. 1 2 3 4 5 | I don't mind internal medical examinations of my vagina. | | | |
| 142. 1 2 3 4 5 | I do not like the smell of my genitals (vagina, etc.). | | | |
| 143. 1 2 3 4 5 | I think internal examinations of the vagina are one of the worst things women (girls) have to go through. | | | |
| 144. 1 2 3 4 5 | When I have my period, I'm very self conscious. | | | |
| 145. 1 2 3 4 5 | An internal examination of my vagina is no big deal. | | | |
| 146. 1 2 3 4 5 | I think there is no reason to be afraid of internal examinations of the vagina. | | | |
| 147. 1 2 3 4 5 | When I'm sexually turned on, I find my own lubrication (wetness in vagina) embarrassing. | | | |
| 148. 1 2 3 4 5 | I dislike having a menstrual period because it's unpleasant. | | | |
| 149. 1 2 3 4 5 | I am afraid of gynecologists (doctors who give internal examinations of the vagina). | | | |
| 150. 1 2 3 4 5 | I'm relaxed about internal examinations of the vagina. | | | |

SOCIAL AND SEXUAL BEHAVIOR INVENTORY FOR MALES

This questionnaire will be completely anonymous (no one will know it is yours) and it will be used for statistical purposes only. Therefore, do NOT put your name anywhere on this questionnaire and use a normal pencil or pen so that all questionnaires will look about the same.

This questionnaire asks personal questions about your social, sexual, and contraceptive (birth control) activities. Therefore, if you do not wish to answer these questions, you do not have to do so. That is, completing this questionnaire is completely voluntary.

Many questions will ask how often you "normally" do some things. When answering these questions please think about your activities during the last few weeks and then think about whether the last few weeks were different because of unusual events (e.g., you broke up with your girlfriend, you were out of town, you had final exams). Your answers should describe what you may normally do when things are not unusual.

When answering questions about how often you do some things, put a number on the correct line. Here is an example:

EXAMPLE:

How often do you normally watch television?

ANSWER A	ANSWER B	ANSWER C
<u> </u> times per day	<u> 2 </u> times per day	<u> </u> times per day
<u> 4 </u> times per week	<u> </u> times per week	<u> </u> times per week
<u> </u> times per month	<u> </u> times per month	<u> </u> times per month
<u> </u> times per year	<u> </u> times per year	<u> </u> times per year
<u> </u> never	<u> </u> never	<u> 0 </u> never

Answer A means that you watch TV 4 times per week. Answer B means that you watch TV 2 times a day, and Answer C means you never watch it.

1. How often do you normally talk with girls?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
 2. How often do you normally go to a party?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
 3. How often do you normally go out on a date?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
 4. How often do you normally go out with a group which includes girls?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
 5. Do you have a steady girlfriend?
☐ yes
☐ no
- If no, skip to Question 7.
 If yes, continue with Question 6.
6. How often do you normally have a discussion about sex with your steady girlfriend?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
 7. How often do you normally have a discussion about sex with one or more girls (not including your steady girlfriend)?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
 8. How often do you normally have a discussion about sex with one or more guys?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
 9. How often do you normally have a discussion about sex with your parents?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never

10. How often do you normally have a discussion about sex with religious leaders?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

11. How often do you normally have a discussion about sex with other adults (e.g., neighbors, other adult friends, doctors, etc.)?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

Young people are very different in whether or not they engage in different types of sexual activities. Some young people do not yet engage in any of the sexual activities discussed below. Other young people frequently engage in some of these activities, and some engage in all of the activities.

12. How often do you normally masturbate (play with yourself sexually)?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

13. How often do you normally engage in light petting (playing with a girl's breasts)?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

14. How often do you normally engage in heavy petting (playing with a girl's vagina and area around it)?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

15. How often do you normally engage in sexual intercourse (making love)?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

If your answer to Question 15 is never, you have completed the questionnaire. Thank you very much for your help.

If you have engaged in sexual intercourse (made love), please continue with the questions on the following page.

If you do NOT have a steady girlfriend, skip to Question 18 below. If you do have a steady girlfriend, answer Questions 16 and 17 below.

16. How often do you normally engage in sexual intercourse with someone who is not your steady girlfriend?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

17. How often do you normally engage in sexual intercourse with your steady girlfriend?

☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never

18. How often do you normally engage in sexual intercourse without you or your sex partner using contraception (birth control)?

☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never

19. How often do you normally engage in sexual intercourse while high on drugs or alcohol?

☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never

20. How often do you normally engage in sexual intercourse while high on drugs or alcohol and WITHOUT you or your sex partner using contraception (birth control)?

☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never

21. Have you ever made a girl pregnant?

☐ yes
☐ no

22. Have you made a girl pregnant during the last two months?

☐ yes
☐ no

23. Have you ever had a close call (thought you had made a girl pregnant when she actually was not pregnant)?

☐ yes
☐ no

Please continue with the questions on the next page.

Think carefully about the times that you have had sexual intercourse (made love) during the LAST MONTH. Think also about the numbers of times you did use and did not use contraception (birth control) and the types of birth control used.

In the column at the right, write the number of times that you or your sex partner used each type of birth control during the LAST MONTH.

	<u>Number of Times</u>
24. Used no method of birth control (or don't know if the girl used a method)	_____
25. Used withdrawal (pulling out before coming)	_____
26. Used rhythm method (not having sex during the girl's fertile days of the month).	_____
27. Used condom (rubber) only	_____
28. Used contraceptive foam only.	_____
29. Used birth control pills.	_____
30. Used a diaphragm.	_____
31. Used an IUD	_____
32. Used a condom and foam together at the same time. . .	_____
33. Used some other method or combination of methods (please describe the method(s)) _____ . . .	_____

TOTAL	_____

Please add up the number of times you used each method. Is this the total number of times you had sexual intercourse during the last month? If not, please adjust the numbers so that the total does equal the number of times you had sexual intercourse.

Questions on the following pages ask how often you have done some things. Possible answers include:

- | | |
|-----------------|-------------------------------------|
| "Never" | which means about 0% of the time. |
| "Sometimes" | which means about 25% of the time. |
| "Half the Time" | which means about 50% of the time. |
| "Usually" | which means about 75% of the time. |
| "Always" | which means about 100% of the time. |

34. Have you used the withdrawal method (guy pulling out before coming)?

___ yes
___ no

If no, skip to Question 37 on the next page.
If yes, continue with the questions below.

When answering the questions below, think about only those times when you used withdrawal as the only method of birth control.

35. How often did you climax (come) inside or near the girl's vagina?

___ never (5)
___ sometimes (4)
___ half the time (3)
___ usually (2)
___ always (1)

36. How often did you have sexual intercourse a second time after you had climaxed (come) less than a few hours earlier?

___ never (5)
___ sometimes (4)
___ half the time (3)
___ usually (2)
___ always (1)

Ignore these numbers ↗

37. Have you used the rhythm method (not having sex during the girl's fertile days of the month)?

___ yes
___ no

If no, skip to Question 41 on the next page.
If yes, continue with the questions below.

When answering the question below, think about only those times when you used the rhythm method as the only method of birth control.

38. How many times a MONTH does the girl normally take her temperature in order to determine when she ovulates (when she releases an egg)?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)
___ don't know (3)

39. How many times a MONTH does the girl check the color and consistency of her mucous in order to determine when she ovulates?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)
___ don't know (3)

40. How often do you have sexual intercourse during the girls fertile period?

___ never (5)
___ sometimes (4)
___ half the time (3)
___ usually (2)
___ always (1)
___ don't know (3)

Ignore these numbers

41. Have you used a condom (rubber)?

___ yes
___ no

If no, skip to Question 45 on the next page.
If yes, continue with the questions below.

When answering the questions below, think
about only those times when you used condoms
(rubbers) as the only method of birth control.

42. How often did you hold onto the condom
(rubber) when pulling out of the vagina?

___ never	(1)
___ sometimes	(2)
___ half the time	(3)
___ usually	(4)
___ always	(5)

43. How often did you use the same condom
(rubber) more than once?

___ never	(5)
___ sometimes	(4)
___ half the time	(3)
___ usually	(2)
___ always	(1)

44. How often did you make sure there was room
in the condom at the tip of the penis before
sexual intercourse?

___ never	(1)
___ sometimes	(2)
___ half the time	(3)
___ usually	(4)
___ always	(5)

Ignore these numbers

45. Has your sex partner used contraceptive (birth control) foam?

☐ yes
☐ no

If no, skip to Question 50 on the next page.
If yes, continue with the questions below.

When answering the questions below, think about only those times when you used contraceptive foam as the only method of birth control.

46. How often did she put foam into the vagina at least 5 minutes before you climaxed (came)?

☐ never (1)
☐ sometimes (2)
☐ half the time (3)
☐ usually (4)
☐ always (5)
☐ don't know (3)

47. How often did she put foam into the vagina less than 20 minutes before you climaxed (came)?

☐ never (1)
☐ sometimes (2)
☐ half the time (3)
☐ usually (4)
☐ always (5)
☐ don't know (3)

48. How often did she use additional foam each time you had sexual intercourse?

☐ never (1)
☐ sometimes (2)
☐ half the time (3)
☐ usually (4)
☐ always (5)
☐ don't know (3)

49. How often did she douche (wash the inside of her vagina) less than 6 hours after sexual intercourse?

☐ never (5)
☐ sometimes (4)
☐ half the time (3)
☐ usually (2)
☐ always (1)
☐ don't know (3)

Ignore these numbers

50. Has your sex partner taken birth control pills?

☐ yes
☐ no

If no, skip to Question 52 on the next page.
If yes, continue with the question below.

When answering the question below, think about only those times when you used birth control pills as the only method of birth control.

51. When the girl had missed taking the pill for two or more days in a row, how often did you have sexual intercourse?

☐	never	(5)
☐	sometimes	(4)
☐	half the time	(3)
☐	usually	(2)
☐	always	(1)
☐	don't know	(3)

Ignore these numbers

52. Has your sex partner used the diaphragm?

___ yes
___ no

If no, skip to Question 61 on the next page.
If yes, continue with the questions below.

53. Does the girl use her own diaphragm (not someone else's)?

___ yes (5)
___ no (1)
___ don't know (3)

54. Has she been fitted for a diaphragm within the last two years?

___ yes (5)
___ no (1)
___ don't know (3)

55. Has she had a pregnancy since she was last fitted for a diaphragm?

___ yes (1)
___ no (5)
___ don't know (3)

56. Has she gained or lost 10 pounds since she was last fitted for a diaphragm?

___ yes (1)
___ no (5)
___ don't know (3)

When answering the questions below, think about only those times when you used the diaphragm as the only method of birth control.

57. How often did she insert it in the vagina less than four hours before sexual intercourse?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)
___ don't know (3)

58. How often did she remove the diaphragm at least six hours after sexual intercourse?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)
___ don't know (3)

59. How often did she cover the diaphragm with at least a teaspoon of spermicidal jelly before putting it in the vagina?

___ never (1)
___ sometimes (4)
___ half the time (8)
___ usually (12)
___ always (16)
___ don't know (3)

60. How often did she make sure the dome of the diaphragm covered the cervix?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)
___ don't know (3)

Ignore these numbers

61. Has your sex partner used an IUD?

___ yes
___ no

If no, skip to question 63 on the next page.

If yes, continue with the question below.

When answering the question below, think about only those times when you used the IUD as the only method of birth control.

62. How often did you have sexual intercourse when the girl had not recently checked the threads of the IUD to make sure it was still in place?

___	never	(5)
___	sometimes	(4)
___	half the time	(3)
___	usually	(2)
___	always	(1)
___	don't know	(3)

Ignore these numbers

63. Have you and your partner used a condom and contraceptive (birth control) foam together at the same time?

___ yes
___ no

If no, you have completed the questionnaire.
Thank you very much for your help.

If yes, continue with the questions below.

64. How often did you hold onto the condom (rubber) when pulling out of the vagina?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)

65. How often did you use the same condom (rubber) more than once?

___ never (5)
___ sometimes (4)
___ half the time (3)
___ usually (2)
___ always (1)

66. How often did you make sure there was room in the condom at the tip of the penis before sexual intercourse?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)

67. How often did the girl put foam into her vagina at least 5 minutes before you climaxed (came)?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)

68. How often did she put foam into her vagina less than 20 minutes before you climaxed (came)?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)

69. How often did the girl use additional foam each time you had sexual intercourse?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)

Ignore these numbers

70. How often did the girl douche (wash the inside of her vagina) less than 6 hours after sexual intercourse?

☐	never	(5)
☐	sometimes	(4)
☐	half the time	(3)
☐	usually	(2)
☐	always	(1)

Ignore these numbers

Thank you very much for your help.

SOCIAL AND SEXUAL BEHAVIOR INVENTORY FOR FEMALES

This questionnaire will be completely anonymous (no one will know it is yours) and it will be used for statistical purposes only. Therefore, do NOT put your name anywhere on this questionnaire and use a normal pencil or pen so that all questionnaires will look about the same.

This questionnaire asks personal questions about your social, sexual, and contraceptive (birth control) activities. Therefore, if you do not wish to answer these questions, you do not have to do so. That is, completing this questionnaire is completely voluntary.

Many questions will ask how often you "normally" do some things. When answering these questions please think about your activities during the last few weeks and then think about whether the last few weeks were different because of unusual events (e.g., you broke up with your boyfriend, you were out of town, you had final exams). Your answers should describe what you may normally do when things are not unusual.

When answering questions about how often you do some things, put a number on the correct line. Here is an example:

EXAMPLE:

How often do you normally watch television?

ANSWER A	ANSWER B	ANSWER C
<u> </u> times per day	<u> 2 </u> times per day	<u> </u> times per day
<u> 4 </u> times per week	<u> </u> times per week	<u> </u> times per week
<u> </u> times per month	<u> </u> times per month	<u> </u> times per month
<u> </u> times per year	<u> </u> times per year	<u> </u> times per year
<u> </u> never	<u> </u> never	<u> 0 </u> never

Answer A means that you watch TV 4 times per week. Answer B means that you watch TV 2 times a day, and Answer C means you never watch it.

1. How often do you normally talk with guys?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
2. How often do you normally go to a party?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
3. How often do you normally go out on a date?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
4. How often do you normally go out with a group which includes guys?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
5. Do you have a steady boyfriend?
☐ yes
☐ no

 If no, skip to Question 7.
 If yes, continue with Question 6.
6. How often do you normally have a discussion about sex with your steady boyfriend?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
7. How often do you normally have a discussion about sex with one or more guys (not including your steady boyfriend)?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
8. How often do you normally have a discussion about sex with one or more girls?
☐ times per day
☐ times per week
☐ times per month
☐ times per year
☐ never
9. How often do you normally have a discussion about sex with your parents?
☐ times per day
☐ times per week
☐ times per month
☐ times per year

10. How often do you normally have a discussion about sex with religious leaders?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

11. How often do you normally have a discussion about sex with other adults (e.g., neighbors, other adult friends, doctors, etc.)?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

Young people are very different in whether or not they engage in different types of sexual activities. Some young people do not yet engage in any of the sexual activities discussed below. Other young people frequently engage in some of these activities, and some engage in all of the activities.

12. How often do you normally masturbate (play with yourself sexually)?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

13. How often do you normally engage in light petting (playing with your breasts)?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

14. How often do you normally engage in heavy petting (a guy playing with your vagina and area around it)?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

15. How often do you normally engage in sexual intercourse (making love)?

___ times per day
___ times per week
___ times per month
___ times per year
___ never

If your answer to Question 15 is never, you have completed the questionnaire. Thank you very much for your help.

If you have engaged in sexual intercourse (made love), please continue with the questions on the following page.

If you do NOT have a steady boyfriend, skip to Question 18 below. If you do have a steady boyfriend, answer Questions 16 and 17 below.

16. How often do you normally engage in sexual intercourse with someone who is not your steady boyfriend?
- ___ times per day
___ times per week
___ times per month
___ times per year
___ never
17. How often do you normally engage in sexual intercourse with your steady boyfriend?
- ___ times per day
___ times per week
___ times per month
___ times per year
___ never
18. How often do you normally engage in sexual intercourse without you or your sex partner using contraception (birth control)?
- ___ times per day
___ times per week
___ times per month
___ times per year
___ never
19. How often do you normally engage in sexual intercourse while high on drugs or alcohol?
- ___ times per day
___ times per week
___ times per month
___ times per year
___ never
20. How often do you normally engage in sexual intercourse while high on drugs or alcohol and WITHOUT you or your sex partner using contraception (birth control)?
- ___ times per day
___ times per week
___ times per month
___ times per year
___ never
21. Have you ever been pregnant?
- ___ yes
___ no
22. Have you been pregnant during the last two months?
- ___ yes
___ no
23. Have you ever had a close call (thought you were pregnant when you actually were not pregnant)?
- ___ yes
___ no

Please continue with the questions on the next page.

Think carefully about the times that you have had sexual intercourse (made love) during the LAST MONTH. Think also about the numbers of times you did use and did not use contraception (birth control) and the types of birth control used.

In the column at the right, write the number of times that you or your sex partner used each type of birth control during the LAST MONTH.

	<u>Number of Times</u>
24. Used no method of birth control (or don't know if the guy used a method).	_____
25. Used withdrawal (pulling out before coming)	_____
26. Used rhythm method (not having sex during the fertile days of the month).	_____
27. Used condom (rubber) only	_____
28. Used contraceptive foam only.	_____
29. Used birth control pills.	_____
30. Used a diaphragm.	_____
31. Used an IUD	_____
32. Used a condom and foam together at the same time. . .	_____
33. Used some other method or combination of methods (please describe the method(s)) _____ . . .	_____

TOTAL	_____

Please add up the number of times you used each method. Is this the total number of times you had sexual intercourse during the last month? If not, please adjust the numbers so that the total does equal the number of times you had sexual intercourse.

Questions on the following pages ask how often you have done some things. Possible answers include:

"Never"	which means about 0% of the time.
"Sometimes"	which means about 25% of the time.
"Half the Time"	which means about 50% of the time.
"Usually"	which means about 75% of the time.
"Always"	which means about 100% of the time.

34. Have you used the withdrawal method (guy pulling out before coming)?

☐ yes
☐ no

If no, skip to Question 37 on the next page.
If yes, continue with the questions below.

When answering the questions below, think about only those times when you used withdrawal as the only method of birth control.

35. How often did the guy climax (come) inside or near your vagina?

☐ never (5)
☐ sometimes (4)
☐ half the time (3)
☐ usually (2)
☐ always (1)

36. How often did you have sexual intercourse a second time after the guy had climaxed (come) less than a few hours earlier?

☐ never (5)
☐ sometimes (4)
☐ half the time (3)
☐ usually (2)
☐ always (1)

Ignore these numbers

37. Have you used the rhythm method (not having sex during your fertile days of the month)?

☐ yes
☐ no

If no, skip to Question 41 on the next page.
If yes, continue with the questions below.

When answering the question below, think about only those times when you used the rhythm method as the only method of birth control.

38. How many times a MONTH do you normally take your temperature in order to determine when you ovulate (when you release an egg)?

☐ never (1)
☐ sometimes (2)
☐ half the time (3)
☐ usually (4)
☐ always (5)

39. How many times a MONTH do you check the color and consistency of your mucous in order to determine when you ovulate?

☐ never (1)
☐ sometimes (2)
☐ half the time (3)
☐ usually (4)
☐ always (5)

40. How often do you have sexual intercourse during your fertile period?

☐ never (5)
☐ sometimes (1)

Ignore these numbers

41. Has your sex partner used a condom (rubber)?

___ yes
___ no

If no, skip to Question 45 on the next page.
If yes, continue with the questions below.

When answering the questions below, think
about only those times when you used condoms
(rubbers) as the only method of birth control.

42. How often did the guy hold onto the condom
(rubber) when pulling out of the vagina?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)
___ don't know (3)

43. How often did the guy use the same condom
(rubber) more than once?

___ never (5)
___ sometimes (4)
___ half the time (3)
___ usually (2)
___ always (1)
___ don't know (3)

44. How often did the guy make sure there was room
in the condom at the tip of the penis before
sexual intercourse?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)
___ don't know (3)

Ignore these numbers

45. Have you used contraceptive
(birth control) foam?

___ yes
___ no

If no, skip to Question 50 on the next page.
If yes, continue with the questions below.

When answering the questions below, think
about only those times when you used
contraceptive foam as the only method of
birth control.

46. How often did you put foam into the vagina
at least 5 minutes before the guy climaxed
(came)?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)

47. How often did you put foam into the vagina
less than 20 minutes before the guy climaxed
(came)?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)

48. How often did you use additional foam each
time you had sexual intercourse?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)

49. How often did you douche (wash the inside
of your vagina) less than 6 hours after
sexual intercourse?

___ never (5)
___ sometimes (4)
___ half the time (3)
___ usually (2)
___ always (1)

Ignore these numbers

50. Have you taken birth control pills

☐ yes
☐ no

If no, skip to Question 52 on the next page.
If yes, continue with the question below.

When answering the question below, think about
only those times when you used birth control
pills as the only method of birth control.

51. How often did you miss taking the pill for two
or more days and still have sexual intercourse?

☐ never	(5)
☐ sometimes	(4)
☐ half the time	(3)
☐ usually	(2)
☐ always	(1)

Ignore these numbers

52. Have you used the diaphragm?

☐ yes
☐ no

If no, skip to Question 61 on the next page.
If yes, continue with the questions below.

53. Do you use your own diaphragm (not
someone else's)?

☐ yes (5)
☐ no (1)

54. Have you been fitted for a diaphragm within
the last two years?

☐ yes (5)
☐ no (1)

55. Have you had a pregnancy since you were last
fitted for a diaphragm?

☐ yes (1)
☐ no (5)

56. Have you gained or lost 10 pounds since you
were last fitted for a diaphragm?

☐ yes (1)
☐ no (5)

When answering the questions below, think
about only those times when you used the
diaphragm as the only method of birth control.

57. How often did you insert it in the vagina
less than four hours before sexual intercourse?

☐ never (1)
☐ sometimes (2)
☐ half the time (3)
☐ usually (4)
☐ always (5)

58. How often did you remove the diaphragm at
least six hours after sexual intercourse?

☐ never (1)
☐ sometimes (2)
☐ half the time (3)
☐ usually (4)
☐ always (5)

59. How often did you cover the diaphragm with
at least a teaspoon of spermicidal jelly
before putting it in the vagina?

☐ never (1)
☐ sometimes (4)
☐ half the time (8)
☐ usually (12)
☐ always (16)

60. How often did you make sure the dome of
the diaphragm covered the cervix?

☐ never (1)
☐ sometimes (2)
☐ half the time (3)
☐ usually (4)
☐ always (5)

Ignore these numbers

61. Have you used an IUD?

___ yes
___ no

If no, skip to question 63 on the next page.

If yes, continue with the question below.

When answering the question below, think about only those times when you used the IUD as the only method of birth control.

62. How often did you have sexual intercourse without having recently checked the threads of the IUD to make sure it was still in place?

___ never	(5)
___ sometimes	(4)
___ half the time	(3)
___ usually	(2)
___ always	(1)

Ignore these numbers

63. Have you and your partner used a condom and contraceptive (birth control) foam together at the same time?

___ yes
___ no

If no, you have completed the questionnaire.
Thank you very much for your help.

If yes, continue with the questions below.

64. How often did the guy hold onto the condom (rubber) when pulling out of the vagina?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)
___ don't know (3)

65. How often did the guy use the same condom (rubber) more than once?

___ never (5)
___ sometimes (4)
___ half the time (3)
___ usually (2)
___ always (1)
___ don't know (3)

66. How often did the guy make sure there was room in the condom at the tip of the penis before sexual intercourse?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)
___ don't know (3)

67. How often did you put foam into the vagina at least 5 minutes before the guy climaxed (came)?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)

68. How often did you put foam into the vagina less than 20 minutes before the guy climaxed (came)?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)

69. How often did you use additional foam each time you had sexual intercourse?

___ never (1)
___ sometimes (2)
___ half the time (3)
___ usually (4)
___ always (5)

Ignore these numbers

70. How often did you douche (wash the
inside of your vagina) less than 6 hours
after sexual intercourse?

—	never	(5)
—	sometimes	(4)
—	half the time	(3)
—	usually	(2)
—	always	(1)

Ignore these numbers

Thank you very much for your help.